The Builder.

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OF making books, there is no end:" nor do we desire there should be. If there *were* an end, what should we poor critics do? many of our contemporaries would say. To "book some new thing," is not an easy or often-occurring matter: new ideas and great thoughts are less plentiful than gold,—at all events, in California,—and some real *thing* yet unsaid is found with difficulty. To diversify the surface of knowledge, however; to put it in a fresh light, especially if a stronger; to gather together scattered fragments, and form thereout a whole; to lure some minds to what they had before disregarded, or provide instructive amusement for others, is of no trifling consequence: and long, therefore, may the world be able to exclaim, "of making books there is no end." What should we do without books,—what should we *be* without books? They preserve for us the best part of the best men; give us pure joys, and alleviate our sorrows: they take us back into the past, and aid us in preparing for the future.

With books such as those to which we are now particularly alluding, we have not editorially much to do, but they are our recreation and delight,—the medicine which "physics pain," and increases enjoyment,—and we speak in thankfulness.

In graver strain, and all the quieter for the foregoing spasm, let us make known to our readers the contents and character of two or three books now before us, which belong to our province, and have a certain sort of connection. First, then, of the

"MUSEUM DISNEIANUM."

The number of specimens of ancient art, real and forged, to be found treasured up in museums, and scattered about all over Europe, is quite extraordinary, and if it could be correctly stated, would scarcely be believed. In England alone these collections are enormous, and in many cases are little known. Available records of them, it need scarcely be said, are very valuable; while unknown beyond their owner's immediate circle, they are comparatively useless to investigators, and it is therefore most desirable that their possessors should be led to print catalogues and descriptions of them.

Amongst the finest of these collections is that belonging to Mr. Disney, F.R.S., at the Hyde, near Ingatestone, and, under the title we have just now quoted,* Mr. Disney has recently published two elegant volumes of descriptions, illustrated by numerous woodcuts and lithographs. The first part was exclusively dedicated to marbles. The second part, now issued, is confined to bronzes, some Anglo-Roman pottery, and three cinerary urns.

During a residence in Italy from 1795 to 1798, a relative of the collector was enabled to acquire many specimens taken at the time from Herculaneum and Pompeii, at much less cost and trouble than they can be procured for now. In those days the state of the country was such, and the indolence of the court of Naples in these matters so great, as almost to amount to indifference, and consequently the people had more facilities of selling objects which they found there. Greater care is at present taken of these relics; they are deposited in the *Museo Borbonico*; and the site of Pompeii, as all recent travellers know to their cost, is watched and guarded; so much so, indeed, that of many things even sketches cannot be obtained without putting a piece of silver on the eyelids of eager functionaries, to prevent them temporarily from seeing.

Of each object in Mr. Disney's collection an engraving is given, all executed by Mr. George Measom, and they are apparently very truthful. A few of them will doubtless be acceptable to our readers.

Fig. 1* is a tripod found at Pompeii in 1790. This was probably used (says Mr. Disney) to hold the frankincense and verbena upon the altar, and thence called a *thuribulum*. The interior (fig. 2) is highly wrought with leaves and the, so-called, honeysuckle, in a circle: in the centre is a head of Medusa.

Fig. 3 is a lamp found at Herculaneum about 1795, and ascribed to the best time of the Greek republics. It is 9 inches in diameter, and has ten lights, each terminating in a bull's head, so contrived that the flame would issue out from between the horns. Several other lamps are given in the work.

Fig. 4 is a vase handle, with two heart-shaped ears, highly ornamented, by which it seems to have been attached to the bowl. It is 5½ inches wide and 6 inches high.

While one class of minds are discovering, collecting, and arranging the works of classic times,—and truly wonderful works these are, produced for the most part before the Christian era commenced,—others are working in the mediæval mine, and are multiplying for present use, and saving for posterity, by means of an accurate pencil and printer's ink, the forms of works which are scarcely likely to endure so long as those last mentioned. Mr. J. K. Colling has just now completed the first volume of

"GOTHIC ORNAMENTS DRAWN FROM EXISTING AUTHORITIES,"

and a very nice volume it is, containing 104 plates, 19 of which are enriched by gold and colour.† Well may the author say in his preface that he "has often paused in his labours to gaze, with wonder and admiration, at the never-ending variety and glorious genius displayed by our forefathers in the various portions of their works." The variety *is* never-ending; and yet how few were the principles on which these men worked! how simple the course of their proceeding!

Our author continues,—"How great is the regret which arises in the mind when it is observed that, in our modern ecclesiastical structures, ornament is too often either altogether banished, on account of its expense, or left to the untutored hands of a common workman!

Of late, however, a better spirit has arisen, and there are edifices erecting in different parts of the country which would do credit to our masons of old. Should the present work be found to conduce ever so slightly to the general promotion of this spirit, and assist the artist in his progress, the labours of the author will be amply repaid, and his utmost object realised."

Viewed rightly as materials for study, as evidence of the mode adopted by the mediæval workmen in ornamentation, and as a collection of beautiful forms and arrangements for re-combination, it will assist the artist in his progress; but if it be used only as a collection of patterns, to be blindly and slavishly copied, it will only tend, in common with similar works, to perpetuate the reproach which attaches to us as a race of feeble imitators.

The examples are all classed, as Early English, Decorated, and Perpendicular; and a good notion of the peculiarities of ornamentation belonging to each style may be gained by an examination of the volume. Some of the coloured plates are very excellent; and it is satisfactory to observe a gradual improvement in the plates from first to last, because it leads to the anticipation that the second volume will be even better than the first, and ought to induce many who may have hesitated about subscribing till the work was finished, at once to send in their names, and so to encourage the artist in what must be a costly undertaking.

The book is particularly rich in examples of the decorated period. One of these we have engraved for our pages, as well because it is a beautiful specimen, and shews the application to nature made by the mediæval ornamentalist, as well as an evidence of the character of the book. It represents a stone canopy, from an arcade in the presbytery of Winchester Cathedral, on a scale of 1½ inch to a foot.*

Throughout the book this resort to natural types, especially during the best period of mediæval art, is made evident, and has been fully felt by the author.

Having so often dwelt on the advantage which would follow a return to this study of natural forms for ornamental purposes, we have received with considerable satisfaction Mr. Whitaker's

"MATERIALS FOR A NEW STYLE OF ORNAMENTATION,"

which consists of fruits and flowers drawn from nature in outline.† Amongst them we need scarcely say will be found the type of many a familiar object of ancient and mediæval art:—

"The sunpurge presents the type of many a Gothic roset; the horny gentian, Solomon's seal, and red misletoe are almost well-known Grecian borders; in the convolvolus, the left hand flower is precisely the same as one on an Etruscan vase in the British Museum; the camelia, with the globe, having in the centre only a plain hollow, which follows the loss of the inner petals, they falling off a short time after the flower has blown, is a striking ancient type; about the honeysuckle, it is superfluous to say any thing; the iris must have given the idea of the Gothic finial; and the light-foot has the leaf most prevalent in the same style: the flowers in the drawings which agree with the ancient centres of architectural capitals it is useless to point out, as they all so palpably shew the derivation of those sculptured ornaments."

The great point is to teach the student how natural objects should be represented to render them consistent with architectural design. There is always a point of sight which is most advantageous, and this requires to be determined with judgment.

We have before this ventured on the asser-

* *Museum Disneianum*, being a description of a collection of various specimens of ancient art in the possession of John Disney, Esq., F.R.S." London: Rodwell. Bond-street.

* See p. 27.

† "Gothic Ornaments; being a series of Examples of Enriched Details and Accessories of the Architecture of Great Britain." Drawn from existing Authorities, by Jas. K. Colling, Architect. London: Geo. Bell.

* See p. 30.

† "Materials for a New Style of Ornamentation, consisting of Botanical Subjects and Compositions, Drawn from Nature." By H. Whitaker. 1849. London: Weale.

tion that natural forms, *geometrically* arranged, should be resorted to for ornamentation. Mr. Whitaker takes the same view, using, indeed, almost our words. Speaking of such an application of flowers in their natural form as is sometimes seen, without any connection with architectural features, he says,—"There has hitherto been a conventional blindness to the absurdity of their adoption in this way, which is a mode totally different from the one I am propounding, which proposes in the first instance to give by means of a geometrical representation an architectural character, and then to connect them with architectural designs on the most approved principle revealed in antique and mediæval art."

The book contains fifty plates, nicely lithographed, and will be found of important service, not merely to architects and decorators, but to muslin and calico designers, bookbinders, plasterers' modellers, paper-stainers, and all connected with ornamental design. We are firmly of opinion that Mr. Whitaker has done service by the production and publication of this book, and we hope it will find the good sale it deserves.

"Life is short and Art is long." Those who smooth the way deserve well of their fellows.

ON THE VARIOUS QUALITIES OF CAEN STONE.

IN all well-regulated concerns of an extensive kind, a judicious division of labour is indispensable: an architect would require his life and faculties to be prolonged to the extent of the patriarchs of old were he to attempt, by his own personal observations, to gain a thorough knowledge of the numerous materials employed in an extensive edifice. The practical part of his profession alone, if scientifically studied, is far too extensive for the brevity of one man's life; it must be the result of accumulated knowledge, the collective labour of many observant individuals; such a mass of information can, therefore, only be acquired collaterally, through the medium of books, and oral communications.

It is a duty incumbent on every member of society to use his best endeavours, however insignificant, to facilitate the advancement of knowledge, and to make his fellow creatures as much wiser and as much better informed as lies in his power. Under these impressions, I venture to shew my zeal in the cause, by offering some observations on the nature and properties of stone from the quarries at Caen and its neighbourhood.

The stone in most general use for ornamental architecture, in the south of England, is obtained chiefly from that extensive tract of country usually denominated the "Oolitic district," which passes from Yorkshire through the various counties until it reaches the coast of Dorsetshire. The same kind of stone again appears in Normandy, and its characteristic features prevail in the celebrated quarries around the city of Caen: diverging into several branches or ranges of hills, it traverses France, forms the great mass of the Jura Mountains, and constitutes part of the chain of the Alps. The Oolitic rocks of Normandy present a close analogy in their general, and even in some of their minor divisions, to those of southern England: commencing in the vicinity of Havre de Grace, and extending our observations to the neighbourhood of Caen and Falaise, we find a series of beds corresponding with those of the Oolite in our own country. It would thus appear, that throughout a considerable portion of France and England, the causes which produced the Oolitic rocks did not differ materially; shewing, that at the time of their production, similar general causes were in action over a particular portion of the two countries, probably long before the sinking of the land which produced the English Channel.

The entire country from the sea to some distance beyond Falaise, and from Bayeux to a considerable distance east of Caen, is composed of the same mineralogical description of strata; remarkably horizontal, and in all probability continuous, or without interruptions. The comparative insignificance of elevations or depressions, merely of a few yards, up or down, is unimportant when considered on the principle of a general level. It rarely happens that a district, of 30 or 40 miles in area, presents so tame and unpicturesque a scene, so apparently undisturbed by any geological phenomena, as is to be found in the neighbourhood of Caen. All these various beds of Oolitic limestone are of marine origin—consequently they must have been deposited at the bottom of an ancient sea, and then upheaved to their present position, where they appear to have remained undisturbed since the period of their consolidation, affording a striking example of long continued tranquillity; and remarkably contrasting with the violent distortions, depressions, fractures, and denudations, so conspicuous on the opposite coast, from the Isle of Wight to the extremity of Dorsetshire. The only instance of a geological disturbance in the district appeared to me to be in the line of the river Orne, and the variation of level about the entrances to the principal quarries, which seems to have been caused by a *fault*, either of elevation or subsidence; and I am inclined to believe that the very same strata, which have been so long worked for architectural purposes, might be found beneath the meadows, on the low side of the river. Such a disruption of rocky masses is at first startling to the imagination of a common observer, but extremely insignificant to the geologist. Whether such change took place by upheaving or sinking, it must have been uniform over a considerable area, for there is hardly an instance in which the strata are bent or contorted from the level.

On approaching the coast of Normandy, from the English Channel, and for some distance up the river Orne, on the eastern bank, rocky masses of a hard calcareous nature are abundantly sprinkled near the coast, and scarcely to be seen above water, which renders the navigation so far dangerous, that vessels are compelled to take a pilot to enter the Orne. This same stratum of limestone, being very nearly level, continues also inland to the eastward, where there are quarries at Cagny and at Bonneville; but the most extensive quarries of this material are situated at Ranville, close to the eastern bank of the Orne, about halfway between the sea and the city of Caen. This stone is composed almost entirely of broken shells, occasionally rather oolitic, and containing fragments of very small fossil corals: the whole slightly and irregularly laminated, is united into a mass with a strong calcareous and highly crystalline cement. In geological position this limestone rests upon the Caen freestone. It resembles in general structure and composition several varieties of similar material to be found in our own country, such as the Hamhill stone near Yeovil, the Taynton near Burford, that of Weldon-in-the Wood, Northamptonshire, and a few more, all of which are well known to be extremely durable, although they are usually rather too coarse grained to be used for minute ornaments, but no doubt admirably adapted for bold architectural or engineering works.*

Before particularising the stone of any precise spot, it may be well to state that the city of Caen, together with its entire environs, rest immediately upon the rocks of freestone. The bare strata may be observed on the surface of the ground, all round the foundations of some of the principal buildings of the city and villages in the neighbourhood. Although the beds in general appear to be perfectly level, nevertheless, upon a more attentive examination, through a distance of 10 or 12 miles, an evident depression may be observed from inland towards the sea, of probably about 100 feet, or an angle of something like 1 in height to 500 in length; for this reason the beds of Caen freestone are not to be found on the coast, where, if they are continuous, they are buried beneath the Ranville rocks, and probably form the bed of the sea.

From the general flatness of the country it is rather difficult to distinguish the precise localities where older rocks have risen from beneath to the surface through the freestone beds; and in the immediate neighbourhood of Caen such features appear to be of rare occurrence. It is pretty certain that the same calcareous strata may be traced in continuity round the city as far as St. Croix and Tourville on the west; also to Fontenay; and on the road from Caen to Falaise, with one or two slight interruptions, similar stone may be found throughout nearly the whole distance of 20 miles, for I am disposed to consider the quarries of St. Pierre and Aubigny merely as modifications of the same rock.

Leaving the consideration of subjects which may appear remote and hypothetical, I now proceed to the main object of inquiry, which is to describe the different qualities of Caen stone. As I have already stated, there are many places in the neighbourhood from whence building stone is at this time procured; and there are others where the name and inequality of surface would lead us to suppose that, in by-gone times, quarrying operations had been practised to a considerable extent, although long since discontinued. Even close to the walls of the citadel, and midway between two of the largest buildings in the city, namely, the churches of St. Stephen and the Holy Trinity, there are places still retaining the names of the "Old Quarries," the "New Quarries," and the "Little Quarries:" of these I shall have occasion to offer some remarks hereafter. But the principal quarries from whence Caen stone is procured, which, from their number and extent, we may infer have been in work during several centuries, are situated from 1½ mile to 2 miles' distance, on the south-west of the city, near to the village of Haute Allemagne. The surface of the country, especially that part over the quarries, is nearly level, having a very slight inclination towards the north-east, so as to drain into the river which divides the high from the low land. The river above the city is very narrow and shallow, little more than a brook or rivulet, and has never been used for the conveyance of stone, although it runs close by the entrances to the principal quarries. The quarries, to the number of about 30 or 40, are all subterranean, and are entered from a road along the side of the hill, or escarpment. A few shafts have been sunk from the surface perpendicularly, up which the blocks of stone are hoisted. The shaft quarries are situated at a considerable distance from those which are entered from the side of the hill, and have therefore no communication from one to the other. In one or two cases, these shaft quarries have been deserted, on account of the water finding its way from the surface into them.

The surface soil in the vicinity of Caen, as is usual in stone countries, is made up of little stones, partly disintegrated rock, and a small quantity of mould, or decomposed vegetable matter. Beneath this, from 20 to 50 feet deep, according to situation, as it may be near to, or distant from, the river, are numerous strata of hard coarse rubbly limestone, of various thicknesses, from a few inches to 3 or 4 feet, with, occasionally, layers of small cherty nodules between the beds, a few inches thick. This entire mass of useless matter forms what is termed the head of the quarry. The actual number of beds is uncertain, for only six have been selected as marketable, or most fit for architectural purposes: beneath these, the stone is not extracted. These six beds, which rest upon each other without interposition, vary in thickness from about 2 feet to 5 feet or more. The estimated aggregate thickness of them all, may be taken at about 17 feet, although in some places the total depth may probably amount to 22 feet. The natural vertical joints being square to each other, and wide apart, blocks of large and varied size can be obtained, even to the extent of 15 feet in length, by 5 feet or more square, but such dimensions are never extracted or required, on account of the many practical difficulties in removal and transport. The names, dimensions, and certain distinctive characters of these workable beds, have been so ably described by Mr. Donaldson and have so recently appeared in THE BUILDER, from the pen of Mr. Godwin, that I need not attempt a repetition.*

Such then is a general outline of the geology of the Caen stone district. The next part of

* I am informed that Ranville stone is being supplied for some part of the sea-wall of the Harbour at Dover.

* See Vol. VI., p. 481 and p. 493.

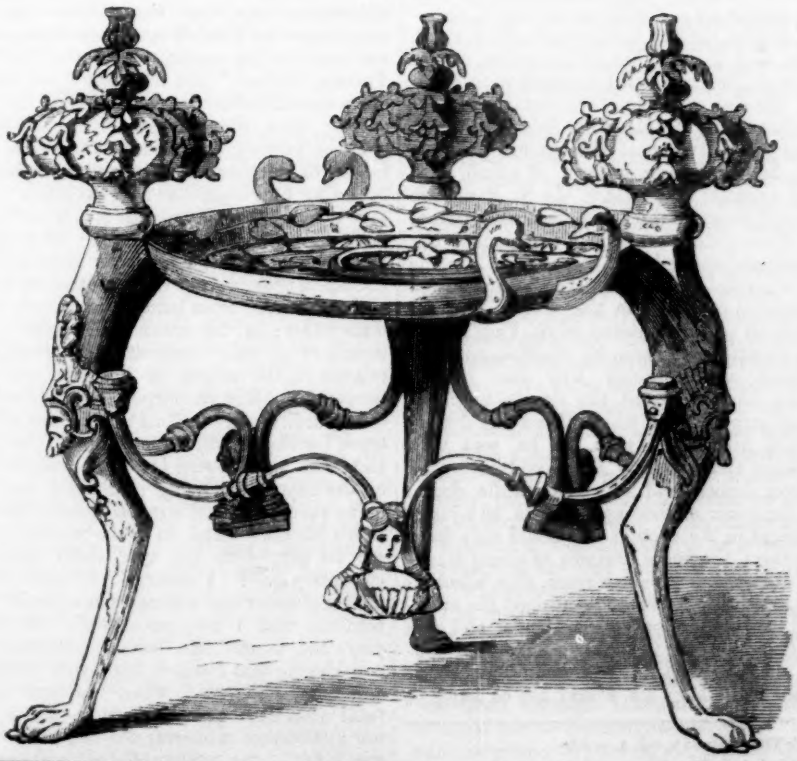
EXAMPLES OF ANCIENT ART.—(See Page 25.)

Fig. 3.

Fig. 2.

Fig. 4.

Fig. 1.



our subject will be to notice the present condition of buildings in the city of Caen, and one or two in this country, which are constructed, beyond doubt, with similar material. Without mentioning any particular building, I may state in general terms, and with little fear of contradiction, that all the richly decorated old churches and other highly ornamented edifices, of early date, in the city of Caen are, viewing them collectively, in a comparatively perfect state; the stonework being almost invariably in good condition, considering the great age of some of the structures. There is, or rather was, one building of celebrity in this country, to which I may allude, because the records of the time state particulars and cost of certain quantities of Caen stone used in its construction.* I mean the chapel of St. Stephen, at Westminster, very recently demolished, except the crypt or under chapel. Although this building could not have been less than 500 years old, yet the carved ornaments and mouldings were in a most excellent state of preservation. I will mention one more circumstance in favour of Caen stone. The cloisters of St. Stephen's Chapel and ornamental Gothic work over them, on the east side of Westminster Hall, are said to have been erected about the year 1530. The greater portion of the richly panelled tracery above these cloisters has just been taken down to make certain alterations, and the Caen stonework is considered by the architect, Mr. Barry, to be in a sufficiently perfect state to be reconstructed without fresh working.

If, in the same manner, we examine modern buildings, or such as have been constructed with Caen stone, either in France or England, within the last twenty or thirty years, we find much variety in the durability of different pieces; some appear effectually to resist the most trying atmospheric influences, and, to all appearance, will remain for many years without shewing the slightest symptom of decay, although wrought into the most delicate ornaments, and placed in very exposed situations; whereas other stones, immediately adjoining the perfect ones, begin to moulder and perish from the first day after they have been placed in the building. In some few instances of buildings of recent date, the entire surface of the masonry retains very nearly the same clean, cream-coloured appearance which it had immediately after completion. Beware of so flattering a prospect. In an atmosphere remote from the metropolis, or from a smoky manufacturing town, such circumstances may take place unattended by premature decay; and it is quite possible that an architect, in his de-

* Rolls of the time of Edward III., containing accounts of expenses relating to the erection of this chapel.—Smith's "Antiquities of Westminster."—Brayley and Britton's "History of the Ancient Palace and Houses of Parliament at Westminster," 1836.

clining years, may look with pleasure upon the ornaments which he had designed while yet a youthful aspirant to professional honours, without the annoyance of seeing them in a mouldering condition, or else half obscured by soot. But in London, whenever I see an elevation, after ten or a dozen years' completion, with a clean surface, and presenting the natural colour of the stone, I always expect to find symptoms of slow, gradual, and certain disintegration from the surface of the stone. Such process of decay may be unobserved in months or seasons, but an insignificant cause will produce a very surprising effect when continued for ages.

It may appear difficult to explain the reason of so much difference in the durability of materials procured from the same locality; but such variety is not peculiar to the Caen stone district alone; it is so with Portland stone, it is so with Bath, with Anston, and I believe it to be the same with all other stones. The numerous old and new buildings in this great metropolis alone, without mentioning any in the provinces, will abundantly prove my assertion.* C. H. SMITH.

PROFESSOR COCKERELL'S LECTURES ON ARCHITECTURE.

THE second lecture of the course on architecture, at the Royal Academy, was delivered on Thursday, the 11th inst. Having in his former lecture endeavoured to reply to any scepticism in reference to the existence of true theoretical principles of architecture, the professor further urged the necessity of inquiring into their nature. The successful pursuit of every art and science required, first, innate feeling; and second, the acquirement of sound theory. He argued that, without the first, as it was hopeless to attempt to teach music to one who had never whistled a tune, so it was to expect that education and labour would, to the requisite extent, supply the want of a natural aptitude for the art of architecture. He mentioned the case of Sir John Leech, who had commenced the study of architecture, but relinquished a pursuit for which he found himself unfitted, for the profession of which he became one of the brightest ornaments.—But, however fortunate the student might be in natural qualifications, he had still much to derive from theory. It might, therefore, be expected that these principles should be attempted to be established by writers, but it was somewhat disappointing to find their perspicuous development lost in metaphysical speculation, of which we might almost say—as had been sometimes said of the philosophy of Kant,—that it was doubtful whether the writer himself understood what he was attempting to enunciate. Criticism might assist the student in gaining the correct views he was in want of, were it dictated by any settled principles. But the critic dealt his blows right and left; we found sounding terms, but what these were he failed to tell us. Certainly we were entitled to expect some clear doctrines in the place of all such demonstration; but, after the indulgence of much ill blood, we were left to ask—in plain *parlance*—is there a theory of architecture, and what is it?

The professor argued that the existence of such a theory was as undeniable as the existence of fixed laws in the works of the great Architect of the Universe; and he proceeded to indicate the way in which that theory might be discovered.—The objects in nature and art were the same; beauty of form and colour were the ends contemplated by both. Regularity was the pervading principle of the works of nature, in which every thing was dictated by the purest taste and the most refined geometry. This was instanced by the beautiful process of crystallization. Peculiar uses became peculiar ornaments—the ornament was co-existent with, and arising out of the use.

We were, perhaps, in the habit of taking many things as mere appendages, without sufficient inquiry into their origin. For example, in the case of the horns of animals—as of the bull and stag. In southern countries, where means of defence were most required in the animal, we found the long horns of oxen, whilst nearer home short horns were common; and so, in inquiring into the development of all the works of nature, we should first trace an object of utility, and afterwards that the forms were those which conduced to ornament. The architect raised the arch and vault, and counteracted the thrust by buttresses, and the casual observer believed these beautiful features were so placed for ornament alone. But if the architect employed a roof with tie beams, and consequently avoided thrust, he dispensed with buttresses, and could substitute columns, and a character accordant with the altered construction. If he had to design a building for a southern latitude, where it was desirable to make the windows small, his design was not discordant with that object, but effect was gained by breadth, and the character given by the piers. But in a northern latitude, where the admission of the sun's rays was to be courted, he imparted character to the *windows*, and followed what was called the "fenestral" order of composition. And thus the skilful architect turned every circumstance of climate or purpose into a source of beauty. For it was only the pedantic architect who applied to all countries, and on all occasions, the same features, and who thus lost the lesson which nature gave. Of this our own empire furnished most striking instances. Instead of applying in particular climates such styles as had originated in similar climates, the lesson of nature, and all previous art, taught nothing to the modern architect. The stoa, or portico, which might be desirable in a southern climate, might, in a northern, be a nuisance, unless glazed, as were the cloisters. The Grecian Doric order, on the Acropolis, seemed to grow out of the rockwork itself; but when placed in our modern streets, and combined with vertical lines, it appeared out of place, like an elephant in a cage. So, place upon a lofty pedestal an elaborate Gothic building with pinnacles and statues, and the effect would be equally inappropriate.

Thus, the professor said, structure was seen to be an important element in art, and out of it arose numerous and surprising results. No fabric could equal the most ordinary one of nature, and if Sir Joshua Reynolds had said that painting was the art of seeing nature, we might say that architecture was the art of understanding it. In proof of the immediate advantage which was to be gained by a study of nature, the professor cited the instance he had given,* on former occasions, of the derivation of the construction of the dome of the cathedral at Florence from the structure of the human skull,—the great difference between this example and that at the Pantheon, in the openings, and particularly in the size of piers, the construction of which he could not be altogether aware of, rendering it necessary that Brunelleschi should devise some method which should combine strength with great lightness. The professor illustrated this part of the subject by a sketch on the board, shewing in section the two thicknesses of the skull, and he also shewed that all the bones, on the same principle, combined strength with lightness. He also gave the other instance, in the derivation of the steeple of St. Bride's Church, with its spiral staircase and central pillar or newel, from a common form of spiral shell having a similar *columella*.† In St. Paul's we might not discover the same direct adaptation, as in Wren's other work just mentioned, but the professor shewed that it was not less the work of a child of nature. He also contrasted the methods practised in the domes, and for the support of the lanterns in St. Paul's, and in the Pantheon at Paris, by Soufflot, and said he could not conceive why the French architect had neglected the simple model of the baptistry at Pisa, which Wren was doubtless well acquainted with, as he was with everything else, and why he should have used the three domes, and why the middle dome, when the other method appeared to be equally convenient in the section. It could only have arisen from the mere bravado of doing something different. The professor, also, alluding to the foresight of Wren, mentioned the stability of the foundation of St. Paul's, and said that openings to the casements were provided only on that side of the building where the cold and damp air would not be likely to find admittance.—We have not space to do justice to all the instances which were given of the analogy between architecture and nature, seen even in the structure of shells, in which was noticed the principle which had been applied in one of the latest improvements of ship building, nor to do more than mention the beautiful passage in a work of Sir Charles Bell, in which the most striking instances of mechanical skill were shown to be infinitely surpassed in the structure of the human form, evidencing as these did, the creative power which the persecuted Galileo saw even in the straw on the floor of his dungeon. The professor reserved for future notice many instances of this analogy in more minute details, as in the parallel cases of the right lines of architecture, and the line of the horizon at sea, and in the similarity of the forms of waves, and the outlines of sinuous mouldings. He cited such instances to show the uniformity which must exist in all styles, and that the great principles of taste must be always the same. He had shown that there was a theory in art as in nature, that we spoke of "the great Architect of the Universe," that there was one great school of architecture, and that there was no other school, or "taste," or prophet under heaven, which could be compared with it; that it was not the knowledge of various styles, and not the going to Greece or Rome, which made the true architect, but that the flowers of the field offered better models than could be found in the works of man, and that if a national style was ever to be established, nature presented the true road to the grand in architecture.

THE CHICHESTER SCHOOL COMPETITION.

Mr. John Elliott has published some correspondence on this matter, involving two or three curious points. It seems that the money was provided by subscription for a memorial of Bishop Otter, and that a school being determined on as the form of the memorial, a competition took place several years ago, and a plan submitted by Mr. Elliott being considered the best, he was elected the architect. The matter remained dormant for a time, but his design, he states, was retained on the understanding that he was to be employed when the work was commenced.

On the appearance of the recent advertisement requesting plans for a school to be sent in competition, Mr. Elliott put forth his claim to the appointment, and as it seems to us (knowing nothing more of the circumstances than what appears in print), with great right. He had spent money on a chance in a lottery, and had drawn the prize, such as it was: it seems rather too bad to tell him afterwards there was no prize.

The reply by the Rev. Mr. Parrington to his application was, that the "Otter memorial committee had handed over their whole powers and trust to the committee of the Chichester Training School," and that they knew nothing of his appointment: knew nothing of his plans.

But, says Mr. Elliott,—"The 'handing over of powers and trust' from one committee to another, surely implies the handing over also of obligations and liabilities. I will take the case that the present committee select a design from those to be sent in; they promise the architect that he shall be employed, but circumstances prevent the intention so formed and announced from being carried into immediate effect; in the mean time, some of the members of this committee are changed, a change in the extent of the plan is deemed necessary, not in its purpose,—would either or both these changes afford the shadow of a pretence for disregarding the claim of the architect who had devoted his time and his talent on the chance of being so elected, and who, being successful, had a moral right to the fruits of his labour? And in what respect, permit me to ask, does my case differ from this imaginary one? I devoted my time to preparing designs and estimates in a similar competition, and I was successful: for several years the matter has been in abeyance, but considering that I was in the hands of honourable men, who would, when the time arrived, fulfil what had been promised to me, I made no application whatever for remuneration of any kind." He further offered, without extra

* To be continued.

* *Vide* THE BUILDER, vol. 4, p. 63.

† *Vide* vol. 4, p. 63.

charge, to make as many designs as they required till one was obtained to meet their views.

The sub-committee, however, had made up their minds, and all Mr. Elliott could get was a recommendation to compete again. His original plans being "discovered," were returned to him. The fresh competition he declined; and in a long letter asserted that he has been exposed to persecution and loss of practice by certain clergymen, and can only conclude that they are acting in the spirit of a policy "openly advocated by clergymen of the new school, to exclude from employment all architects objecting to go freely in certain papistical bye ways, miscalled the 'old paths.'" And he asserts that "those architects who will not zealously further such views, are regularly hunted down by their organ, libelled without mercy, or the slightest regard to truth, and refused redress on the plea that it was all done *pour l'amour de Dieu*."

Mr. Elliott goes on to shew how it was attempted, in another case, to put him aside, "in favour of Mr. Butler, the builder employed by the chapter;" and says,—"It was this same Mr. Butler, one of the very last men I should have to fear as a competitor in my profession (in which he is an interloper), whom the 'cathedral party' and the chapter agents have for some time past been so unfairly attempting to force into my practice, with whom I had to compete on the occasion when the committee chose my design for the Training School. It was not considered expedient to appoint him at once after such a result, so it was resolved to have another competition, of which no intimation was conveyed to me. A very ingenious advertisement was drawn up, and an equally ingenious reply framed, for those architects who might be foolish enough to waste their time in competing, and write for particulars,—the substance of it being that, if they required information other than the advertisement afforded, they must find it out for themselves. These things savoured so strongly of an intended wrong, that they excited the suspicion and drew forth the comments of the editor of The Builder. The competition over, the seventy or eighty unlucky architects are informed by another ingenious advertisement in The Builder, that the committee have decided on the design marked "December, 1848;" and that the other parties may receive back their plans on application: of course the competitors must all be satisfied at this—the committee do not even yet know the name of the party who has got the prize: by the most extraordinary chance in the world, however, it turns out that "December, 1848," is *Mr. Joseph Butler*, the chapter's own man, the very party whom every one knowing any thing of the circumstances connected with the affair, knew it was intended should have it, by hook or by crook." We give the pith of this not uninstructive story just as it comes to us, and leave our readers to draw their own inferences.

ACCESS TO CHURCHES.

During my late rambles in the provinces, as often as I came to a large town and wished to explore its ecclesiological remains, so often had I to utter the invariable cry,—"Where are the church keys?" With hardly a single exception, I found the church locked up, the clergyman living at a distance, the clerks engaged in their secular occupation, and even the sextoness sometimes gone "a-washing." In a few places a board is stuck up, stating that the sextoness lives in such-or-such a place; but when the tired stranger has reached that locality, and inquired for this indescribable female, he is generally informed that she has changed her abode—perhaps to some distance. He then goes there, and finds she is "a-washing" at Mrs. Thompson's, or on some such woman's errand. On one occasion, having repaired to the advertised residence of a sextoness in a dark alley, I found her abode changed for one at some distance, where, having tracked her out with much difficulty, and mounted to some four-pair back, I found the poor female alone, ill in bed, the keys of the sacred edifice being entrusted to her sole care!

When recently in Bristol, on my applying to a sexton for admittance to a church, I was coolly informed by him that, being engaged in his secular occupation, "he could not attend to me, and without him no one might visit the church, lest a Prayer-book should be stolen!!" I urged my plea that, as a stranger, I might not again have an opportunity of visiting the edifice, but to no effect; and, at a great inconvenience, had again to wait on him at the hour he named.

But, Sir, should this be so? If this utilitarian age consider it sufficient to worship God collectively once a-week, is it right, is it decent, that our churches should be sealed up as hermetically as a prison—admittance hardly to be obtained—the keys found only after great delay—and when a hasty glance has been cast at the building, to be greeted, as I have been in a parochial church at Glastonbury, with the show-like expression, "We charges a shullin a head, zur!" If strangers found everywhere the courtesy displayed at St. Mary's Redcliffe, there would then be no need of complaint.

In making these observations, I have not urged, as I could have done, the obstacles daily thrown in the way of members of the architectural profession, when endeavouring to obtain some memorial of past art. That these impediments are numerous, no one can deny; that none is more unnecessarily vexatious than this hiding of church keys, every one will admit; and it is in the hope that your columns will be open to deprecate so unjustifiable a system, I have now ventured to address you.

F. C. W.

THE MARBLE ARCH IN ST. JAMES'S PARK.

The danger is imminent; the palace advances to completion; soon the hoard will be removed, and the arch, the costly monument of George the Fourth, is doomed to demolition. Perhaps this structure is not very remarkable for beauty of design, or for any elaborate finish; it stands, however, a solitary instance of regal magnificence, being the only evidence in marble of an architectural portal in London, and with its bronze gates, which are good specimens of their kind, is not an unworthy memento of a monarch whose refinement of taste conduced not a little to the embellishment of the metropolis and the encouragement of art.

Is this *Arc de Triomphe* to be abated, and to be lost to the nation whose liberality furnished 70,000*l.* to its edification? For the sake of the capital which boasts but two arches we hope not.

By the way, says my boy who stands beside me, and to whom I refer sometimes as a mentor (for juvenile ideas have their value, albeit he is occasionally a tor-mentor), "Sir, you are mistaken, for there is Highgate Archway, and also the Bar where the arch civic authority receives majesty, and tenders the keys of the city,—Temple Bar."

Well, it is true we do possess these monuments: but still we hope that some site may be found whereon to reconstruct that which, if sold for its intrinsic worth, may not realize 2,000*l.*

Our city has a goodly range, and its locale is happily chosen. Piazzas and largos we have not, save the national fountains; yet there is no deficiency of positions where the restored marble arch might perpetuate the taste of its royal founder.

Could not some public contribution be got up to effect works of great public utility? We do know that St. Peter's was accomplished by such means, and that Peter's pence were collected for the object throughout all Christian Europe. We know that Mr. Cobden and Mr. Hudson had testimonials—colossal ones; and that now a monumental tribute is being collected for a mausoleum to Lord George Bentinck. Then why not, in this wealthy community, collect a fund to illustrate the greatest city of earth,—London? This might be done in shape of a poundage tax, to be levied within the range of the City and Liberties of London and Westminster.

The noble esplanade extending from St. Martin's Church through Pall Mall, now become the street of palaces,—what a glorious approach would that make to Hyde-park, if continued through Cleveland-row, and in a straight line to Buckingham Garden! At one end the spire and portico, at the other the open park: this access breaking out half way between the palace and the Triumphal Arch (from which it might be distant about 200 yards) would present the finest central avenue in Europe, and afford an approach, without a hill, to Hyde-park.

It would be necessary to purchase the corner house of St. James's-street, and six other houses in Cleveland-row, and also the insulated mansion facing the Green-park; this would open the space between Lord Ellesmere's new hall, the Duke of Sutherland's, and St. James's Palace; for the rest, the *débris* of the houses would form the road (about a quarter of a mile) over the flat park, and would effect a truly royal approach to Buckingham Palace.

At the point of junction I would place the marble arch. By this alteration, the noble mansions and palace would be worthy of this emporium of the world, and the gorgeous clubs of Pall Mall would add dignity to the central Boulevard, thus made light and ventilated by vital air.

At the same time, for the embellishment of the new palace and the St. James's-park, the old Mall behind St. James's might be broken up and clothed in shrub and verdure, only reserving the width between two ranges of the trees, now trampled and hardly vegetating there: that is, maintaining the present road through one alley (there are now four) for royal use, and for the privileged classes, between the new palace and the Admiralty.

This would greatly enhance the beauty of St. James's-park, and form a noble vista from the Portal Royal; for there is a space of at least twelve acres of russet gravel at present wasted in road.

In the days of James and Charles this was the Mall, and, therefore, had its uses; but now the promenaders frequent Hyde-park: and the lugubrious trees of the old Mall give melancholy shade to only a few stragglers; for the wandering valetudinarian, nurses and children, range the pleasant sward and water-side within the rails; the external *parterre* is any thing but pleasing, and is avoided, as would be a desert in an Oasis.

Quondam.

LIME-ASH FLOORS FOR COTTAGES.

Twenty years ago the almost universal cottage floor in Devonshire was produced by floating down an admixture of pounded lime (used tolerably fresh), smiths' ashes, and clean drift sand, in equal proportions; this was "run down" on a substratum of coarse gravel, brick bats, and lime core, about 6 inches in thickness, well saturated, then beaten to a level surface.

The lime floor should be 3 inches thick and well floated, and then "ironed down" (the more labour the better), and beginning at the further corner of the room, the man should gradually "work himself out" at the door, so as not to walk upon the new work. In a week it will become hard and durable. It is easily repaired when requisite.

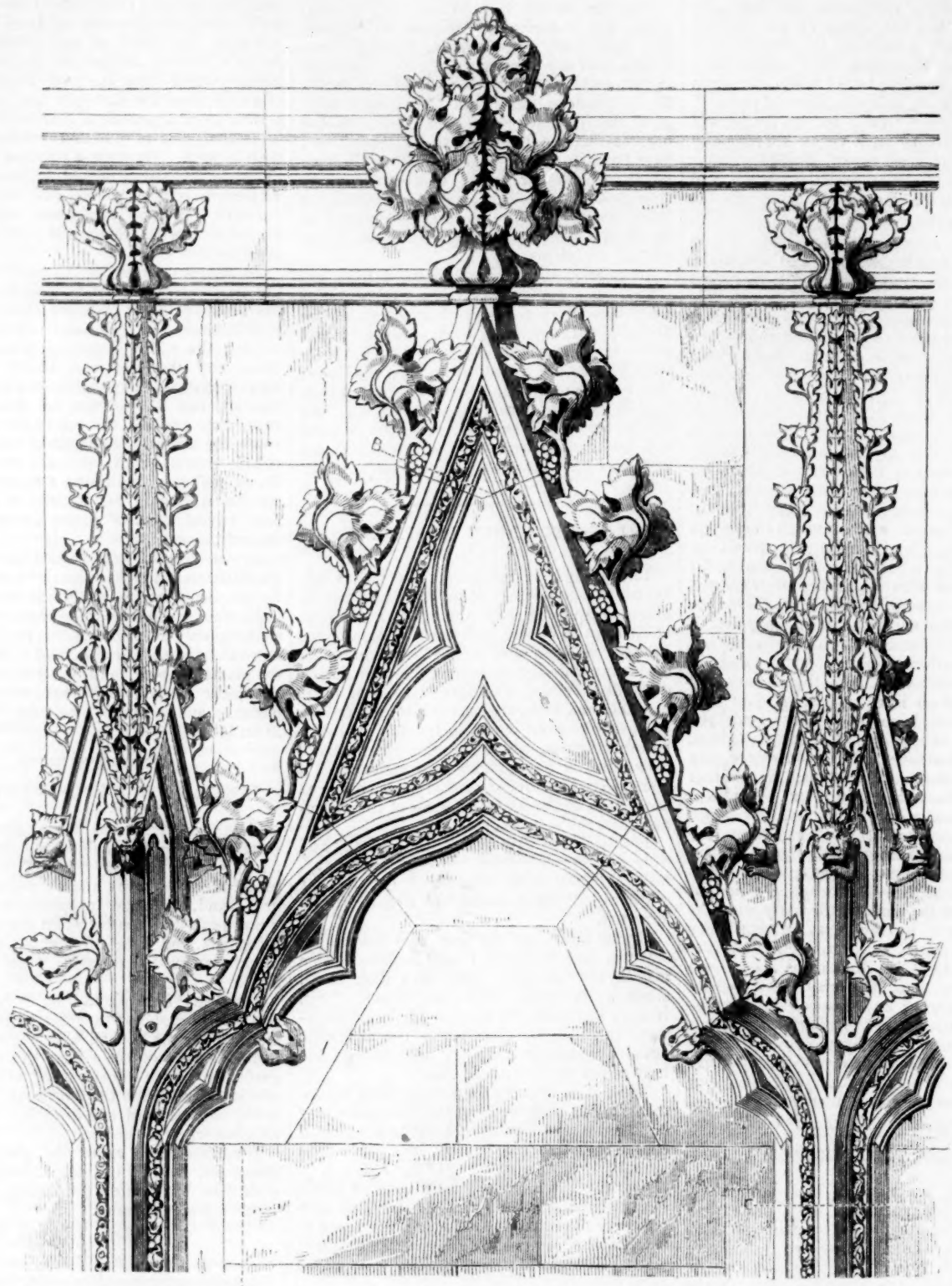
If smiths' ashes cannot be got in sufficient quantities, one-half of brick dust may be mixed with them before they are finally chaffed up with the lime and sand.

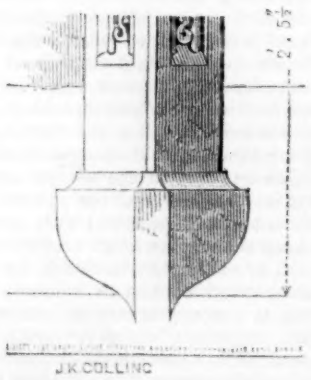
John Burges Watson.

Another correspondent says, that—In Somersetshire, artificial stone floors are constructed in the following manner:—The ground is prepared to receive the material; a concrete is then laid on, about two inches thick, consisting of one part lime to four of sand, well mixed together, taking care not to make it too wet. It is then well rammed with a flat punner, until it becomes sufficiently consolidated to receive the second coat; another layer is then laid on, the same thickness as before, and well rammed: care must be taken to keep the surface level. After a short period it will be sufficiently hardened for use. It is then rubbed over with common oil, which gives it the appearance of stone instead of sand. "Cupola" ashes are used to give the floor a dark appearance. I have seen floors made of this material in imitation of tesselated pavement,—the ashes and lime making the dark portions, and the sand and lime the light parts. This description of flooring costs there about 11d. per square yard.

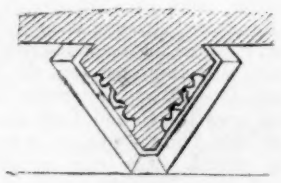
STONE CANOPY IN THE PRESBYTERY, WINCHESTER CATHEDRAL.

(THE DECORATED PERIOD.)





J.K. COLLING



PLAN AT C

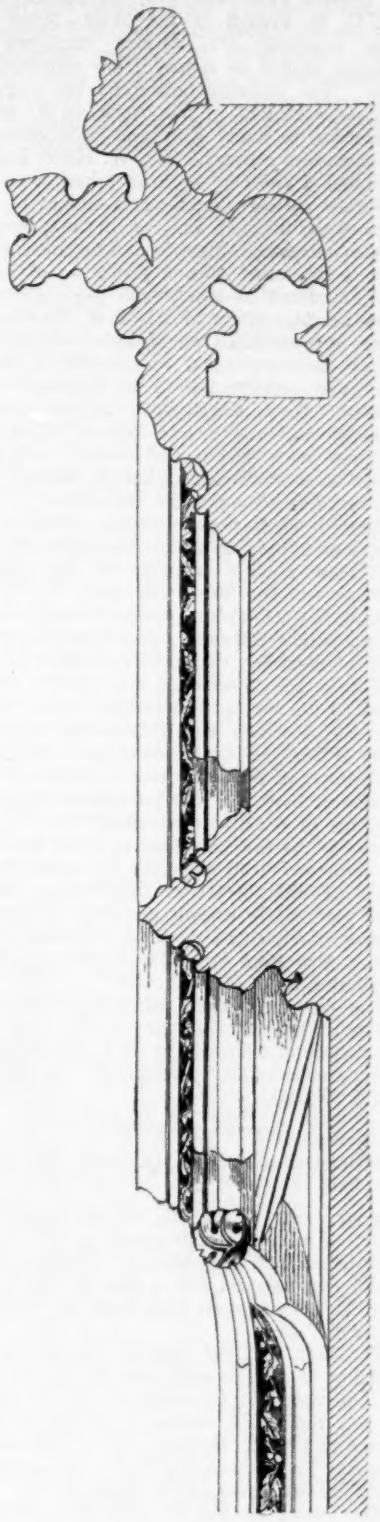
C.D. LAING Sc

Scale 1½ inch to a foot.

[See page 25.

NEWSPAPER BUILDER

DETAILS OF STONE CANOPY.



SECTION OF MOULDINGS AT B
¼ FULL SIZE.

PROJECTED WORKS.—Advertisements have been issued for tenders, by 31st inst., for alterations and additions to Wharton Church, Cheshire; by 8th February, for the erection of prisoners' cells, infirmary, kitchen, &c., at County Gaol, Huntingdon; and by 25th inst. for the erection of a Parsonage House, at Exbury.

MR. BARRY AND THE SEWERS' COMMISSIONERS.

DRAINAGE OF THE NEW HOUSES OF PARLIAMENT.

A VERY curious document, comprising the report of Mr. Austin (on the part of the commission) on the drainage of the new Houses, Mr. Barry's reply, and Mr. Austin's observations thereon, has been printed, and is about to be issued for the use of the commissioners.

The matter can scarcely remain where it is, and is likely to excite much interest.

Circumstances having rendered an examination of the sewers at the building in question desirable, Mr. Austin was directed to make it, and to report to the board. From this report we learn (omitting other particulars) that a private sewer, 5 feet 6 inches high and 3 feet wide, traverses the whole length of the new buildings, joining the public sewer in Abingdon-street, at the southern end, and going directly (although not originally so) to the outfall into the river at Westminster-bridge, at the northern end. "On examination," says the report, "it is found that the portion of the sewer running through the buildings is constructed above the level of the floor of the vaults. On looking through one of the flapped communications which enter just above the invert, the sewer appeared to be at that point nearly its entire height above the ground level. On reaching the centre of the buildings, however, we discovered an opening about 2 feet square broken through the arch of the sewer, apparently for some temporary purpose. On c'ambering through this opening we found ourselves in the very vaults of the new buildings."

The report continues—"The condition of this main sewer throughout its entire length must be regarded as extremely dangerous to the health of those who reside in, and frequent these buildings. It is nothing but a continuous cesspool from one end to the other, emitting most noxious effluvia; and being blocked up at each end with heavy flaps, the only source of ventilation is into the buildings themselves, or into the court-yards into which these buildings look.

Dr. Reid has been at great pains, and considerable cost, in the construction of an air shaft, to avoid taking air for ventilation from near a sewer, while all the time a sewer of the first class is pouring forth into the buildings, from one end to the other, malaria, evaporating from a surface of foul matter of between 2,000 and 3,000 square feet in extent.

The foul matter throughout its whole extent is nearly equal to the full width of the sewer, and presents an evaporative surface for the exhalation of noxious effluvia equal to 150 ordinary cesspools."

Of the various communications from the buildings which open into the sewer, a most singular description, illustrated by sketches, is given. "Some of them," it is said, "are brick barrel drains, of 9, 12, 15, and 20 inches in diameter, wretchedly constructed. The outlet into the sewer of one 20-inch drain is about a fourth part of the drain itself.

Some of the communications are half-tile drains covered with brick flat, with square openings broken through into the sewer. Several are stone-ware pipes; some of them projecting into the sewer several inches, others stopping several inches short; some broken right away at the mouth by being driven forcibly in. Some are obstructed at the outlet by bricks and lumps of cement."

It proceeds:—"So much has recently been said on the extravagant size of sewers which generally prevails, that it will be unnecessary to enlarge upon this part of the subject; but it may be urged as a reason for such large constructions in this immediate district, that a certain amount of reservoir is required for the storage of storm waters during high tides, when the outlets of the sewers are closed; but these reservoirs, where indispensable, should never form the receptacles of the general refuse drainage. In the buildings in question, where every facility exists for the immediate discharge of all surface water into the river, this consideration should never have weighed at all; and in the new plans contemplated for the neighbourhood, it would indeed be extremely injudicious to admit into the general system the surface waters from buildings occupying an area of between six and seven acres, from which no decomposing matter would be conveyed by the rain, and from which any amount of storm water may at all times be immediately discharged into the Thames.

Two fifteen-inch pipes falling each way and discharging north and south, with the inclination and pressure that would be obtained, would carry off the waters of the greatest storm upon record from nearly double the surface, or twelve acres of covered ground."

"The main sewer through the building Mr. Barry has it in contemplation to alter, by cutting off its junction with the Abingdon-street sewer, and directing the inclination all in one direction, from the south end of the buildings to the outlet at Westminster-bridge; but if the proposed separation and immediate discharge of the surface waters were to be effected, a construction of these large dimensions would be totally unnecessary, inasmuch as it would be upwards of thirty times greater than the utmost provision that should be made; and as, while it is allowed to continue, the buildings can never be maintained in a healthy condition, I would strongly advise its entire removal.

The cost of the alteration would be comparatively most trifling; but even if it were considerable, it would be folly to be spending many thousands upon ventilation, and an attempt to provide fresh air, while this fruitful and extensive source of malaria is permitted to exist.

A nine-inch pipe, with a fall each way of an inch in ten feet, which can be obtained along the present line of sewer, would discharge 72,000 gallons of water per hour; a supply many times beyond what the requirements of the buildings can ever furnish."

Mr. Barry is, of course, somewhat angry with this, and complaining that "its highly-wrought descriptions and numerous mis-statements likely to be prejudicial to his professional character, have got into print," earnestly requests the Commissioners to assist him in giving the same publicity to his replies, as the allegations have had. Mr. Barry commences with the following remarks on the system of drainage adopted:—

"That it was devised and commenced in accordance with the rules and regulations of the late Commission of Sewers for Westminster, and that the lowest available depth of drainage was adopted of which the data furnished by that Commission would admit.

That the system was arranged at a time when the present vaults of the building were not in contemplation.

That the system is as yet only partially carried out, in consequence of the unfinished state of the building; and that many of the existing arrangements connected with the drainage are either unfinished, or are of a temporary nature.

That during ten hours upon an average in every tide, the outfalls of the public and palace main sewers are closed by the rise of the tide in the river, and all drainage from the New Palace is consequently stopped for that time periodically.

Under these circumstances, no other system than that which was adopted was found to be practicable; but it has been long the intention of the architect to recommend the adoption of an exclusive system for the New Palace, by which its drains should be entirely cut off from the public sewers."

Omitting his replies to those parts of the report not mentioned by us, we pass to this,—"The main sewer is not, as stated, constructed above the floor of the vaults; the latter were not even projected when the sewer was formed. It is not the fact that it is even now in the vaults of the building; on the contrary, it passes nearly throughout its entire length under the courts and open gateways of the building. Under the courts it is imbedded in the earth, and under the gateways it occupies a space which is not a vault, and where it is intended to be imbedded in solid concrete. The only portion of it which passes under the building is for about 36 feet in length at the north end of it, where it is entirely below the vault-floor level, and imbedded in the earth. At no part of its length is the main sewer, as stated, 'nearly its entire height above the ground level,' or, as doubtless Mr. Austin means, the *vault-floor* level."

Mr. Barry complains of a sketch which Mr. Austin gives in his report to shew the appearance of the sewer in the vaults, as conveying an exaggerated idea of the latter, which he says are not vaults, but "arched spaces under an open gateway," "intended ultimately to be filled in around the sewer with concrete." He thinks that, "Owing to the levels of the outfalls of the public sewers into the river, the lower portion of the palace main sewer cannot be otherwise than a reservoir (termed by Mr. Austin, a continuous cesspool) for ten hours in every tide; but no inconvenience or nuisance can possibly arise from this circumstance, when every drain connected with the main sewer is properly trapped, which is proposed to be done as they are successively connected with it.

The condition of this sewer, ventilated temporarily as it has hitherto been from the man-holes at the two extremities of the building, cannot even in its present unfinished state be considered, as reported, 'dangerous to health;' not the slightest escape of noxious effluvia has ever been noticed either before or since the publication of Mr. Austin's Report during repeated and careful examinations made by the architect and his assistants, some of whom have remained in the sewer itself for three hours continuously without experiencing the slightest inconvenience.

Upon a very careful examination, the surface of the foul matter within the sewer, instead of being, as stated, 'between 2,000 and 3,000 feet in extent,' has been found not to exceed 1,350 square feet, and this deposit has been principally occasioned by the bricks and rubbish which have unavoidably fallen into the sewer in making the numerous communications with it that have at various times been required, and which, of course, will be entirely removed from time to time as the building approaches completion."

Mr. Austin says the currents of air through openings communicating with the sewer set *outwards* (showing that the foul air was passing into the buildings); Mr. Barry says they have been found invariably to set *inwards*.

"All communications with the main sewer, which are intended to be permanent, are properly and fairly constructed; the reported 'singular collection' consist of temporary, but, for their present purpose, effective communications with that sewer which have from time to time been required during the progress of the works, and will either be removed or made perfect when necessary.

The brick barrel drains are not, as alleged, 'wretchedly constructed.' On the contrary, it is impossible that such drains can be more perfectly constructed."

He thinks "the two 15-inch pipes recommended, considered, as they must be, as reservoirs for the storage of storm water durir g the time when the outfalls are closed by the tide, are utterly insufficient; they would not, for instance, contain 1-40th of the quantity of water which fell in three hours upon the area mentioned in the storm in the month of August of the present year (1848).

The dimensions of the main sewer are considered by the architect to be no greater than are absolutely necessary for the reception of the waters which at times must enter and be retained in it. The escape of noxious effluvia from it when the drainage is completed will be impossible (?)

The cost of its removal, instead of being trifling, as alleged, would be very considerable. The system of drainage now adopted, especially if rendered, as already mentioned, independent of the public sewers, will, in the opinion of the architect, be effective and free from all objections.

The 9-inch pipes here recommended for the ordinary drainage of the New Palace would, for the reasons stated in respect of the 15-inch pipes, be utterly inadequate."

Upon this Mr. Austin rejoins, alluding darkly to a "very serious oversight of another kind in connection with the sewerage," mention of which was kept out of the printed report, and carries his attack even farther than before. He denies that the Westminster Commission, "whatever blame they may have to bear," had anything to do with the faults of drainage of the new Houses. As to the "vaults," he says,—

"It would appear to matter little by what term these portions of the basement of the building should be called; the fact being that there exists a perfect communication throughout the building by their means; that the whole of these works, whether of 'vaults' or 'arched spaces,' appears to be of precisely similar construction, and have, I am informed, always been known and spoken of before committees, and on the works, without distinction, as 'vaults;' and that although open gateways may exist immediately above this part, the exposed sewer itself passes within about 12 yards from the basement of the grand central saloon connecting the Houses of Lords and Commons, with the vaults or arched spaces of which there is perfectly open communication, and through which I have myself passed more than once to the sewer."

Mr. Austin then re-asserts his statements; shews that in 1846 Mr. Phillips, in reply to complaints from Mr. Barry as to the public sewer with which the sewer in question communicates, had pointed out that the latter was simply "an elongated cesspool, the great evil of which must eventually be very obnoxious and injurious," and that the main drainage should be entirely re-arranged;* and he further urges that, by certain works done since his report, closing man-holes, &c., the sewer has been reduced to a more dangerous condition.

"Cut off from all possibility of ventilation, with constant foul deposit therein, the whole length of this sewer must shortly become nothing better than a vast retort, capable of holding some 15,000 cubic feet, in which the foulest gases will be perpetually generating and escaping in a concentrated form into the buildings.

It is a fallacy to suppose that flaps, placed at the mouths of the drains, communicating with the sewer, will at all times prevent the escape of this dangerous miasma. Even supposing that the contact of the surfaces could at all times be perfectly preserved, every time that a discharge takes place, and the flap is raised, an opening is formed through which the foul and pent-up gases will rise and escape into the building."

We cannot, however, give space for more of the report than this one statement, viz., that "The defects of this construction and the bad consequences which must arise from it are manifold, and of that serious nature, that nothing short of the *entire removal* of so faulty a work can cure the evil. It will admit of no real and practicable improvement, and after the attention which has been brought to bear upon the subject of improved drainage, and the sounder doctrines which have recently been promulgated, the precedent cannot surely be allowed of a drainage work, full of defects, and devoid of all correct principle, remaining in connection with the most costly building of the country."

That the drainage in question is utterly bad seems to us clear, and we are sorry that Mr. Barry should have been betrayed, by what he may consider the too *tranchant* character of the report, into attempting to defend what is really indefensible, and what, if the report speaks truly, he himself considers so. We do not care about the minor points in the report, we will not ask if the report be exaggerated or not, nor even think it necessary to inquire if the sewer be above ground in "vaults," or "arched spaces." We dwell on the simple fact that there is beneath the building this enormous reservoir for the generation and retention of deleterious gases, and which, it would seem, cannot be kept cleansed but by constant flashing. To prevent these gases, by means of traps, from discharging themselves into the buildings, seems to us impossible.

In conclusion, we would not have it inferred that we desire to attach blame to Mr. Barry. The sewer, it should be remembered, was built in 1837, when the received views in respect of sewerage were very different from what they are now; and as to the mode in which the communications with the drains are made, the clerks of works and the builders are responsible.

ARTISTS' CONVERSAZIONE.—The first of these *Conversazioni* will be given on the 27th inst.

* Reported in THE BUILDER at the time.

FREEMASONS OF THE CHURCH.

THE first meeting of the above society, for the present year, was held on January 9th, Mr. G. R. French in the chair. After the usual business, Mr. Jarman exhibited an Oriental casket of carved ivory mounted in steel. The chairman observed the singular likeness exhibited in this work, in its ornamentation, to many European productions of the thirteenth century. Mr. W. Harry Rogers exhibited a rubbing he had taken from an elaborate carved sandal-wood casket of the close of the fifteenth century, in the collection of the late Sir S. Meyrick. This interesting relic is decorated with a profusion of knot-work, executed in relief, with the addition of roses, hearts, and the initials M. R. Mr. George Isaacs also exhibited an ancient jewel casket, of perpendicular taste, remarkable as being unusually architectural in its features. The corners of the lid are supported by four twisted columns, and the spaces between them are enriched with empanelled work of delicate finish. A short discussion having been entered into respecting the purpose and origin of these caskets, of which the middle ages produced an abundant supply in various materials, Mr. J. W. Archer read a paper by Mr. D. Wilson, secretary of the Royal Scottish Society of Antiquaries, "On some peculiarities in Scottish ecclesiastical architecture, with special reference to the Collegiate Church of the Holy Trinity at Edinburgh, demolished A.D. 1848." After detailing the wanton destruction of this venerable fabric, which was founded in 1462 by Mary of Gueldres, the widowed queen of James the Second of Scotland, and levelled with the ground in 1848, for the purpose of enlarging the area of a railway terminus, Mr. Wilson proceeded to the narration of some facts on the comparative dates of the successive styles of Gothic architecture in England and Scotland, particularly urging the very early introduction of decorated work in Scotland before even a symptom of its approach had been manifested south of the Tweed.

The chairman then announced the next paper, to be read February 13th, "On the importance of a knowledge and observance of the principles of art by designers," by Mr. W. Smith Williams.

THE HORSE-POWER POCKET-BOILER.

Your paper of the 6th instant contains a notice of a new steam-engine by Mr. Beauregard, in which it is stated, "a correspondent of the *Times* asserts that a steamer was navigated to Lisbon, some years back, on a similar principle," &c.

The fact, that the principle sought to be obtained in this steamer, was the very reverse of that stated to be employed by M. Beauregard, renders it desirable that it may be generally known, in order that your readers may not be led away by chimerical accounts of results that never can be realised.

The vessel alluded to was the *Comet*, a Government steamer of 80-horse power, which was filled with Mr. Thos. Howard's vaporizers, by Messrs. Penn, the engineers. The heating surface of these vaporizers containing but 6,298 in., being equal to 78·7 in. per horse-power, may well challenge a comparison with M. Beauregard's "horse-power pocket-boiler," and further, from dry plates being used in both cases. But here all comparison must end. It was Mr. Howard's object to inject the water in an extreme state of divisibility, upon plates, maintained at from 350° to 450° Fahrenheit, it being found, and confirmed by experiment, that the vaporization of water goes on much more quickly than at higher temperature. The maintenance of the "spheroidal state," as it is termed by M. Beauregard, was that sought to be avoided. This state occurs when water is thrown on plates at very high temperatures, and arises from its being kept from actual contact by a film of steam forming beneath it, and holding it in suspension, thereby causing its spheroidal form, and preventing its speedy evaporation.

I will not here enter into the system of surcharging the steam, &c., employed by Mr. Howard. Suffice it to say, that the practical difficulties of employing heating surfaces at temperatures of 400° to 500°, were found to be

insuperable, and his plan, which was excellent in theory, was given up on account of them.

How perfectly insurmountable these difficulties will become when "red-hot plates are employed," is known to every engineer; and in heartily wishing M. Beauregard every success from his invention, I must recommend him to seek it from water in other forms than its "spheroidal state," and produced by other than "red-hot" surfaces.

WM. JEAKES, JUN.

SANITARY PROGRESS.

IT appears evident from the medical inspector, Mr. Grainger's reports to the Board of Health, that the open ditches and other abominations in the neighbourhood of Mr. Drouet's establishment for pauper children, at Lower Tooting, together with the crowding of nearly 1,400 children into an improperly planned, ill ventilated, and incommodious establishment, were predisposing causes, which, together with the epidemic condition of the atmosphere, produced so many cases of cholera among the children. Doubtless, too, pauper fare was an additional predisposing cause, otherwise the evil might have affected others in the same unwholesome vicinity, where moats of foul black putrefaction show an open surface of between 40,000 and 50,000 square feet to the face of day. Shortly previous to the outbreak, one of the foul ditches near the premises was emptied, and the filthy mud spread upon the banks in contravention of the regulations of the Board of Health, a circumstance quite sufficient of itself to explain the predisposition of these children, in particular, to such an attack in such a neighbourhood.——A superintendent inspector is to be forthwith sent to Birmingham, at the request of the town, to make public inquiry as to the sewerage, water, burial grounds, &c. ——The Smoke Nuisance Committee of the Birmingham Street Commissioners have reported favourably of its suppression throughout the town. Thirty-one steam engines are under periodical inspection. Some of the worst chimneys at Newhall-hill have been rendered smokeless. —— Mr. Smith, of Deanston, has been engaged in sanitary inquiry at Lancaster, where the rate of mortality is above the average, and where Government have, therefore, sent Mr. Smith, without any petition from the inhabitants, who seem to be reckless of their bad pre-eminence in the provincial 'bills of mortality.'——An instalment of the complete and thorough sewerage of the borough of Newcastle has been announced, in the shape of an advertisement for tenders for the construction of two great sewers, one along Pilgrim-street and Northumberland-street, from the Royal Arcade to St. Mary's-place; and the other from Union-street, by Newgate-street, to Green-court.—— The Glasgow magistrates are ordering the discontinuance of burials in various overcrowded burying grounds within the city bounds as nuisances. The details are just a repetition of those awful and sickening desecrations of the sacred remains of humanity with which the public are already but too familiar in reports of the state of intramural grave-yards.

RAILWAY JOTTINGS.

THE calls for January amount to 2,587,225*l.* about a million and a quarter more than for last month.——On the London and North-Western the following persons are employed, including those occupied in the collection and delivery of goods:—2 secretaries, 1 manager, 2 superintendents, 966 clerks, 3,054 porters, 701 police constables, 738 engine and firemen, 3,347 artificers, 1,452 labourers: total number, 10,263. The number of horses employed is 612, ditto vans, &c., 253. This great company has virtually abandoned the unworthy design of clipping their clerks' salaries of a per centage, under the pretence of a "mutual" assurance fund scheme against defalcations. A per centage of 2d. a-pound, however, was first exacted, with a circular threat of dismissal against all grumblers, though "the full concurrence of the parties affected," is now alleged to have been a proviso of this notable scheme. The London and North-Western have succeeded in reducing their rates in the Warwickshire district from 1,500*l.* to 500*l.* per mile, and in another from 800*l.* to 400*l.*—— The recorder of Canterbury has respited the rating case of the South-Eastern in Canterbury, the company to pay half the amount of future rates, till a decision of appeals, and the parish to allow the company any sums that may be paid in excess.——Nearly 30,000 gallons of milk are now sent weekly to the metropolis along the different lines of railway. ——The Edinburgh and Northern have compromised the suit brought against them on behalf of the children of Mr. Wilson, dentist, Edinburgh, who was killed by falling into a cellar at the station, in October, 1847, for 1,100*l.*, each party paying their own expenses. ——"It is said," says *Herepath*, referring to the Dover, "that, among other things, a large sum, about 40,000*l.* (not 4,000*l.*, as erroneously printed in our last) has been used of the Company's money for other purposes. The financial statement which has been expected, it is understood, will not be presented before the meeting."——An immense mass of chalk and earth, it is said, has again fallen in within a short distance of the spots where two previous falls took place, under St. Catherine's Hill, about half a mile from Guildford, and three and a half from Godalming.——A Shropshire paper also states that the Oakengates tunnel, near the Holyhead road, has again given way, and caused some of the road to sink in.——The embankment and sea-wall of that portion of the South Wales line which extends across the sands between Llanelly harbour and Burryport, contracted for by Mr. Joseph Douglas and others, has been almost entirely washed away by the tide. It is not ascertained whether the loss will fall upon the contractor or the company, as the work was stopped by order of the directors.——"We were the first," says the *Manchester Examiner*, "to use the electric telegraph for the purpose of reporting, on the occasion of Mr. Cobden's election for the West Riding of Yorkshire; and we learn that on the meeting in the Free-trade Hall, the office succeeded in transmitting a column and a quarter of that meeting to London, giving a summary of the proceedings, for the London papers, in three hours. The telegraph is beginning to be more appreciated as a means of communication."

METROPOLITAN COMMISSION OF SEWERS.

A SPECIAL court was held on Tuesday, at the Sewers' Office, Greek-street; the Earl of Carlisle in the chair.

A letter was read from Mr. Roe, one of the surveyors, stating that in consequence of age and imperfect eyesight, he should accept the offer of a retiring allowance of 200*l.* per annum; but should nevertheless be at all times ready to render any service to the commission in his power.

The Late Cases of Cholera at the Asylum at Tooting.—A report by Mr. Lovick on the state of Tooting, presented to the General Board of Health, was read by Mr. Hertslet to the court.

Mr. Chadwick rose and said,—The considerations arising from the reading of that report as to the effects of the effluvia from the sewers and receptacles described, upon the unfortunate occupants of the one over-crowded establishment, or the effects which might be produced upon the occupants of other establishments, whose sites are washed by the sewers, need not be dwelt upon before the court. Serious duties devolved upon the commissioners, who would have been moved to execute them at once, but that the place was not at the time the report was made within the jurisdiction of the commission. Since the new commission had been issued, Tooting had been brought under that jurisdiction, which was now called upon to exercise it. As against a summary exercise of power, it was objected that the works in question were private property. Now, in respect to the works for damming up the sewer water for productive purposes, he must allege that it was an invasion of the public property. By custom, by the usual course of legislation, and on all the principles which govern the application of such refuse, it belongs to the public, and he (Mr. Chadwick) submitted that steps should be taken to repress this invasion, and to prevent the like invasions at the expense of the lives, the health, and the convenience of the population. It appeared to him to be a case which came within the duty which devolved under the old statute of sewers, to amend and prostrate public encroachments. There could be no doubt that the remedial principles of the old law were too commonly overlooked, and that fitting occasions to recur to them were furnished, by such cases as the present. He took the liberty of reading the text of the old law, as laid down by Blackstone:—"Every man may abate a common nuisance. The nuisance may be abated, that is, taken away or removed by the aggrieved thereby, so as he commits no riot in doing it." "And the reason," says Blackstone, "why the law allows this private and summary method of doing one's self justice is because injuries of this kind, which obstruct or annoy such things as are of daily convenience and use, require an immediate remedy, and cannot wait for the slow progress of the ordinary forms of justice." And the annotator adds, "That security of the lives and property may sometimes require so speedy a remedy as not to allow time to call on the person on whose property the mischief has arisen to remedy it." He concluded by moving "That a Committee should be appointed, to view the encroachments, and if they saw fit, to order them to be abated."

Mr. Broderip seconded the resolution, which was put by the Chairman, and unanimously adopted. It was next agreed "That this operation be assigned to a district to be called the 'Waudle district,' and the expense debited thereto."

It was ultimately agreed that Capt. Veitch, and Messrs. Hutton, Hawes, Johnson, and R. L. Jones, be the members of such committee.

New Palace at Westminster.—Reports were then read on the drainage of the New Palace at Westminster, to which reference will be found in another page. The reading of them excited much interest.

They were ordered to be printed and circulated among the commissioners.

A deputation attended the court from the meeting, held in Westminster last week, on the subject of "street orderlies," requesting the assistance of this court to carry out their philanthropic objects.

The Earl of Carlisle said the application should receive every attention.

Mr. Cochrane (who headed the deputation), thanked his lordship for the courtesy with which they had been received.

Miscellanea.

YORKSHIRE ARCHITECTURAL SOCIETY.—The quarterly committee meeting of this society was held on January 4th. It was stated by Mr. R. H. Sharp, that in consequence of a grant made at a former meeting towards the restoration of the tower windows of St. Saviour's Church, a very liberal sum had been allowed by the feoffees and churchwardens of that church, in furtherance of this desirable object. A grant of 40*l.* was made in aid of a fund for filling the west window of St. Mary's Church, Beverley, with stained glass, the design of which was submitted to the society and approved. Other grants were also made for restorations at Thorp Arch and Howden Churches.

WARWICKSHIRE ARCHÆOLOGICAL SOCIETY.—The quarterly meeting of the Warwickshire National History and Archæological Society was held at the Museum in Thursday last week, and was well attended. The chief feature was a lecture on "The Religious Architecture of the Middle Ages, more particularly in reference to the Monuments of Egypt," by Mr. J. G. Jackson, of Leamington.

AN EXTENSIVE UNDERTAKING.—The Chapel-hill pits, belonging to the British Iron Company, are at length freed from the enormous quantities of water—the accumulation of years—which have so long flooded them, and coal has at last been found. The water, two years ago, when operations were first commenced, was 84 yards deep, and the expense attending its draining is estimated at no less a sum than 10,000*l.* This includes the erection of engines, stacks, and whimseys, and the losses occasioned by breakages, &c.—*Worcester Chronicle.*

IRISH MANUFACTURES—ORNAMENTAL CAST-IRON WINDOWS.—The Messrs. M'Adam, of Soho Foundry, Belfast, have recently completed a number of ornamental windows for the new palace of the Pacha of Egypt: they are of cast-iron, and of very large dimensions, being 20 feet high and 8 feet wide —each window weighing 5 tons. They are to be bronzed and gilt after being erected. The same firm have also erected on the banks of the Nile, for the Egyptian Government, a number of very large steam pumping-engines, to raise the water of the river for the purpose of irrigation. These facts are interesting.

GENERAL MEETING OF INSTITUTION OF CIVIL ENGINEERS.—On the 16th of January, Mr. Field, President, in the chair, the annual general meeting of this institution was held, when the following gentlemen were elected to form the council for the ensuing year:—J. Field, President; W. Cubitt, J. M. Rendel, J. Simpson, and R. Stephenson, M.P., Vice-Presidents; I. F. Bateman, G. P. Bidder, I. K. Brunel, J. Cubitt, T. Fowler, C. H. Gregory, J. Locke, M.P., I. R. McLean, C. May, and J. Miller, Members; and W. Harding and T. Piper, Associates of Council. The report of the Council was read, and with reference to the pressure of the times, held out cheering hopes for the future, for, as it observed, "in a country like Great Britain, whose distinguishing characteristic is energetic and indomitable courage in circumstances of difficulty, it is not probable that any foreign political excitement can long continue to exercise a prejudicial effect: already the horizon is brightening, and a little reflection will demonstrate that, in proportion to the injury arising from the late stagnation, must be the activity on the resumption of the works; and it appears to be acknowledged that the forced economy which has been practised during the past year, has caused such a necessity for supplies of working stock, and for the improvement of works, that the engineering profession must be generally benefited on the return of confidence in financial affairs." Satisfactory reasons were given for the annual delay in the publication of the minutes of proceedings, and a plan was detailed for paying off the debt incurred for the alterations of the house of the institution. Telford medals were presented to the Right Hon. the Earl of Lovelace, Messrs. Harrison, Mitchell, and Ransome; council premiums of books to Messrs. Harrison and Jackson, and Telford premiums of books to Messrs. Redman, Green, and Rankine; and memoirs were then read of deceased members.

THE WALLS OF ETRURIA.—Nothing, says Mr. Dennis, (in his work "The Cities and Cemeteries of Etruria,") gives a more exalted idea of the power and grandeur of this ancient people than the walls of their cities. These enormous piles of masonry, uncemented, yet so solid as to have withstood for three thousand years the destroying hand of man, the tempests, the earthquakes, the invisible yet more destructive power of atmospheric action, seem destined to endure to the end of time, yet often show a beauty, a perfection of workmanship that has never been surpassed. The style of masonry differs in the two great divisions of the land, and is determined in part by the nature of the local materials. In the northern district the walls are composed of huge blocks, rectangular in general, but of various sizes and irregular arrangement, according as the masses of rock were hewn or split from the quarry; and in some instances small pieces are inserted in the interstices of the larger blocks. There are, also, a few instances of the irregular, polygonal style,—as in the Cyclopean cities of central Italy. In the southern district the masonry is less massive and very regular.

A NEW LINE OF RAILWAY RESEARCH.—According to an amusing railway article in the *Quarterly Review*, attributed to Sir Francis Head, it appears from the books that the annual consumption at the Wolverton refreshment rooms averages—

182,500	Banbury cakes.		5,110	lbs. of moist sugar.
56,940	Queen's cakes.		16,425	quarts of milk.
29,200	patés.		1,095	,, cream.
36,500	lbs. of flour.		17,520	bott. of lemonade.
13,140	,, butter.		35,040	,, soda water.
2,920	,, coffee.		70,030	,, stout.
43,800	,, meat.		35,040	,, ale.
6,110	,, currants.		17,520	,, ginger beer.
1,277	,, tea.		730	,, port.
5,840	,, loaf sugar.		3,650	,, sherry.

And, we regret to add,

730	bottles of	gin.
731	,,	rum.
3,660	,,	brandy.

To the entables are to be added, or driven, thirty-five pigs, who, after having been from their birth most kindly treated and most luxuriously fed, are impartially promoted, by seniority, one after another, into an infinite number of pork pies.

ASHIESTEEL BRIDGE. — WHINSTONE RUBBLE CONSTRUCTION. — We mentioned some time since that a notice of this piece of construction, by Messrs. J. and T. Smith, of Darnick, was read at the Institute of Architects. The bridge has excited much interest in the neighbourhood, and we take the following particulars of it from the *Border Advertiser*:—The arch is elliptical, commencing from the abutments on each side with a short curve drawn to a radius of 24 feet, with a chord line of about 15 feet. This is surmounted by a curve drawn to a radius of 110 feet. The arch springs exactly from the summer level of the river, and its height is 26 feet, with a span of 131½ feet. The breadth of the arch at the abutments is nearly 19 feet, and converges by regular curve lines on each side to 16 feet at the crown. The thickness of the arch, from the abutments to within 24 feet of the keystone, is 2½ feet, backed by four ribs, each 2½ by 2½ feet, and the depth of the arch from there to the keystone is 4 feet. The spandril walls in the haunches rest upon the ribs already mentioned, and are so managed as to be an exact counterpoise to the crown of the arch. The plan of the bridge is simple and plain: and with the exception of the cornice and coping of the parapet walls, there is not a hewn stone in the whole building. The whole of the arch is of common whinstone rubble, built with lime, with here and there a little levelling of the beds with Roman cement. There has been much talk among engineers and architects, as well as others, as to the probable issue of the experiment, and many have been the prognostications of its failure. It is supposed to be the boldest arch ever executed of the same material. The estimate, we understand, was only about 1,200*l*. Ashiesteel is the place where Sir Walter Scott lived so long at, before sitting down at Abbotsford. It is some miles up Tweed.

SUBMARINE TELEGRAPHS.—Mr. Faraday having pointed attention to the highly insulating power of gutta percha, the very obvious application of it in covering the wires of the electric telegraph was forthwith suggested, as in a notice some time ago in THE BUILDER. The fact of its mere capability of doing so scarcely required a formal trial. What is of much more importance is to test its permanency, especially in sea-water, for marine telegraphs. A formal trial, however, of the mere fact of its waterproof and insulating properties was lately made at Folkstone, when, notwithstanding the stupid and absurd management alluded to by the *Literary Gazette*, it was of course found that messages conveyed from a steamer through coils laid through the harbour (they might as well have been laid in the Thames or in a bucket at the London station of the South-Eastern, and thus have saved the trouble of sending reporters all the way to Folkstone) were safely delivered in London, and met with a prompt response—all now mere child's play. The serious question is, whether gutta percha be a prudent coating under sea water, and accordingly it has been suggested that the potent halogens chlorine, bromine, and iodine, which pervade the ocean, as well as sulphuric and other acids also prevailing in marine combinations, may speedily macerate and alter, if not destroy, a vegetable substance such as it is. But there is even a still more imminent peril, that no one seems to have thought of. Gutta percha may be a perfect tit-bit to myriads of the heterogeneous and indescribable living creatures which teem in the ocean, and bore their way through sand, and wood, and rock, consuming all that is not mineral. Time only, with experiments on a comparatively small scale, should be the test of such destructive agencies, and then the "bites of large fishes," the "dragging of anchors," and other probable or dreaded agencies, may be dared on the large scale.

THE MODEL LODGING-HOUSE AT BATH has been opened in Westgate-buildings, for forty persons, with separate beds, washing-stands, cupboards and boxes with locks and keys for all, a coffee-room, sick-room, gas throughout, &c., all, with cooking and attendance, for 1s. 9d. a week, and yet self-supporting: testimonials as to character are very properly demanded from candidates for so much comparative comfort at so little expense.

TESTIMONIAL TO MR. VERNON. — The proposal to raise by subscription sufficient funds to pay for the preparation of dies, and to present annually a gold medal, to be called the Vernon medal, for the encouragement of painting and sculpture, and in commemoration of Mr. Vernon's gift to the nation, appears to have found favour with all parties. A committee has been formed, containing many excellent names, and will shortly put the plan before the public. The medal will be confided to the Royal Academy.

LARGE SCYTHE FACTORY IN AMERICA.—The scythe manufacturing establishment of Reuben B. Dunn, Esq., at North Wane, in Maine, is the largest of the kind in the world. The establishment consists, besides warehouses, furnishing shops, &c., of three principal buildings for manufacturing, two of which are 144 feet in length. In these, and in departments connected with the establishment, are employed about 100 men, many of whom have families settled at the place. A flourishing village has grown up within a few years, and is rapidly increasing. 12,000 dozen scythes are annually manufactured, to produce which are required 450,000 lbs. of iron, 75,600 lbs. of steel, 1,200 tons of hard coal, 10,000 bushels of charcoal, 100 tons of grindstones, and half a ton of borax. This last article is used in the process of welding. Mr. Dunn is erecting additional works in the vicinity, which will be soon completed, when he will be enabled to turn out 17,000 dozen scythes annually. This establishment is now more than double the extent of any other in the world—none even in England being found to compete with it.—*New York Farmer and Mechanic.*

THE IRON TRADE.—At the quarterly meetings just held, the masters again failed to raise prices, even as usual nominally, though, according to their out and out supporters, there was not only an improved demand, but a slight tendency to an advance. It must ever be remembered, however, that at these meetings of the masters, there is always 'a slight tendency to an advance.' Our steady refusal to quote their fictitious quarterly price-nominal, has at length been homologated by the example of one of their own respectable Birmingham supporters, the *Journal*, who says, "We will not attempt to give precise figures, inasmuch as prices, in some slight degree, must vary according to the situation of the works and the condition of the firms, &c.," all of which is quite true, if '&c.,' only comprehended the great desire of the quarterly meeters even for the nominal shadow of 'an advance,' failing the substance. For purchasers, the market is still of course in a very favourable position.

THE STATE OF THE SERPENTINE RIVER, HYDE-PARK.—Finding that no steps have yet been taken towards cleansing the Serpentine, a public meeting of the inhabitants of the neighbourhood was held at the Literary Institution, in Sloane-street, on Tuesday last, when Dr. Jas. Copland took the chair; and Mr. Lilwall, Mr. Goolden, Dr. Wilson, Mr. Geo. Wooley, and others, addressed the meeting, and shewed the necessity for improvement. The chairman said,—The Serpentine River had now become as certain a source of disease as the waters in the rivers of Africa. Indeed, he should say, from his own practical experience and observation, that the water in these rivers were not so foul or pestilential as that which constituted the Serpentine, the latter only requiring an equally high state of temperature to develope those diseases which appear in tropical climates.—The sum of 35,000*l*. was stated to be required for effecting the improvment. Surely the evil might be effectually remedied for a much less amount than this. If the mud be removed it must be done with great caution.

BLIND BUILDERS.—The following is a list of tenders for the brewery, &c. at Camberwell-green, for Mr. Fleming, Mr. Robt. Brown, architect, opened on the 9th inst.:—

Myers	£2,867	0	0
Crawley	2,512	0	0
Wells	2,490	0	0
Hill	2,296	0	0
Tombs	2,048	0	0
Willson	1,983	0	0
Brown	1,975	10	7
Thompson	1,885	0	0

NORFOLK ARCHÆOLOGICAL SOCIETY.—The Bishop of Norwich attended the annual meeting of the Norfolk Archæological Society, which was held on Thursday week. He said he had to congratulate the meeting on two points. The first being that the present was the best exhibition since the commencement of the society, and he hoped it would increase the interests of its proceedings. In the next place he had great pleasure in referring to a fact which would appear from the report that, unlike all the others in the city and county, this institution was in a flourishing state. The subscriptions were increasing, and this would be a source of great satisfaction to them all.

INSTITUTION OF BUILDERS' FOREMEN.—It will be seen by an advertisement, that the anniversary dinner of this Association will take place on the 31st. We shall be glad to find it well attended.

OUR RECORDS.—The occurrence of the late disastrous fire in Lincoln's-Inn affords an opportunity which should not be lost, of again forcing upon the public mind the importance of fire-proof buildings becoming more generally adopted, particularly when used as the repositories of valuable deeds and documents, the loss of which, as in the above instance, no amount of insurance can replace. Our national records too are liable to the like contingency: surely it is time *they* were better cared for. Let the columns of THE BUILDER again send forth the voice of warning ere it be too late, and let this reproach to England be erased, that she has no proper edifice in which to deposit her records, but that they are stowed away in un-come-at-able places, and liable to be destroyed at any time by the merest accident.

E. S.

MEETINGS OF SCIENTIFIC BODIES

Held during the ensuing week.

MONDAY, JAN. 22.—Institute of Architects, 8 P.M.

WEDNESDAY, 24.—Society of Arts, 8 P.M.

THURSDAY, 25.—Royal Society, 8½ P.M.; Society of Antiquaries, 8 P.M.

FRIDAY, 26.—Archæological Association, 4 P.M.

SATURDAY, 27.—Institute of Fine Arts, 8 P.M.

TO CORRESPONDENTS.

Received.—"J. J. L.," "H. J.," "J. H. M.," "W. M." (We cannot give the addresses of manufacturers), "R. C." (Ditto), "A Subscriber from 1844" (Ditto), "R. G. C.," "Would-be-Architect," "E. F." (Thanks), "G. M.," "E. S.," "J. B.," "J. T." (You cannot go on the premises without authority. Ask your solicitor), "W. F." Stockport (Covers for binding may be obtained at the office), "J. C." (We do not know), "J. A," "Bibliotheca," "J. L." (Droitwich), "F. D." (The secretary at any of the institutions will give information required. Plans of the Russell Institution will be found in Britton's "Public Buildings of London"), "E. P.," "W. W.," "J. R.," "Landscape Gardener," "Sir T. D.," "Mr. W.," "E. J. E." (Appears to have been overlooked. Declined with thanks), "J. B. S." (Many thanks for a most acceptable print).

"*Books, Prices, and Addresses*"—We have not time to point out books or find addresses.

ADVERTISEMENTS.

TO ARCHITECTS, ENGINEERS, BUILDERS, &c.

GEORGE JENNINGS, Patentee of the SHOP SHUTTER SHOE and FASTENER.

INDIA-RUBBER TUBE COCK.

IMPROVED WATER-CLOSET, without PAN or VALVE.

JOINTS for CONNECTING LEAD or other PIPES without SOLDER.

IMPROVED CLOSET VALVES.

29, Great Charlotte-street, Blackfriars-road.

For drawings and testimonials see "The Builder," January 6.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS, Manufactory, 86, REGENT-STREET and 121, CHANCERY-LANE. Patent sealed on the 4th day of February, 1845, for Fourteen Years, for Improvements in Revolving Shutters of WOOD and IRON, consisting of Six Methods of Raising and Lowering Shutters, without Machinery, and Two for Hinging and Sheathing the Edges of Wood Laths with Iron.—The Patentee having fixed up some hundreds, will feel pleased in forwarding the Testimonials of Architects, Principals of large Establishments, and others, having them now in use, which fully guarantees the Patentee in stating they are beyond dispute superior to any other Revolving Shutter for durability, security, and simplicity, without the use of cog-wheel worm and screw gear, or any other complicated machinery employed by other makers.

BUNNETT and CORPE, ENGINEERS,

Patentees of

REVOLVING IRON AND WOOD SAFETY SHUTTERS,

and of

ORNAMENTAL METALLIC SASH BARS, MOULDINGS, &c., IN BRASS, COPPER, ZINC, &c.

FOR SHOP-FRONTS, SKYLIGHTS, &c.

Shop-fronts completely fitted and fixed in a superior style, either plain or ornamental, also glazed with best plate glass. Strong moulded stallboards handsomely engraved. Metal works and machinery of all kinds in connection with banking-houses, shops, warehouses, &c. &c.

B. and C. challenge competition as to either quality or price. Designs furnished and estimates given.

IMPROVED PATENT BENCH AND FLOORING CRAMPS FOR BUILDERS.

SOLE LICENCEES FOR MARVIN and MOORE'S PATENT DIAGONAL GRATINGS.

Office of the Patentees, 26, Lombard-street, London; and at the Works, Deptford, Kent.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms.—CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

TO BUILDERS, GLASS CUTTERS, &c.

J. H. COOKE, 30, Great St. Helens, begs to inform the Trade generally, that he has been appointed AGENT for one of the best continental manufactories, and that he can supply CROWN and SHEET WINDOW GLASS on very advantageous terms, and solicits the favour of their orders. All communications addressed as above will receive every attention.

PATENT PLATE GLASS.—CLAUDET and HOUGHTON beg to remind Architects, Builders, and the Public of the very low price at which they are now selling PATENT PLATE GLASS, the effect of which is to supersede the use of Crown Glass in the principal windows of all the better class of dwelling-houses.—Plate, Sheet, Crown, Coloured, and Ornamental Window Glass Warehouse, 89, High Holborn.

**** Lists of the reduced prices forwarded free on application.

PAINTED and STAINED GLASS and ORNAMENTAL GLASS of every kind, for Windows.—CLAUDET and HOUGHTON, 89, High Holborn, execute every description of Ornamental Glass for Windows, in ancient or modern style, at the lowest prices consistent with superior workmanship, either in plain colour, ornamental in white, embossed, engraved, or richly painted.—Patterns and specimens may be seen at their Warehouse, 89, High Holborn.

E. and W. H. JACKSON beg to call the attention of Builders and the trade to the reduced prices of their PATENT PLATE GLASS, which, from its cheapness, is now superseding crown in all respectable dwelling-houses. BRITISH and ROUGH PLATE, CROWN, SHEET, STAINED, and ORNAMENTAL GLASS, supplied of the best manufacture, and at the lowest terms. List of prices, estimates, and every information can be had on application at their warehouse, 315, Oxford-street.

THE UNION PLATE GLASS COMPANY beg to call the attention of architects, surveyors, builders, large consumers, and the trade generally, to the quality, colour, and substance of their highly-finished glass, and as the discounts vary according to size, they prefer giving a special estimate for each quantity required. To encourage the use of Plate Glass for glazing purposes, the price is considerably reduced, which will, for its durability and appearance, insure the preference to any other description.

ROUGH PLATE GLASS supplied for skylights, warehouses, workshops, and flooring, 3-8ths, ½, ¾, and 1 inch thick.

London Warehouse, 99, Hatton-garden, Holborn.

H. CHRISTIE, Agent.

WINDOW GLASS. — THOMAS MILLINGTON solicits an inspection of the different GLASSES he has now in stock, the qualities of which will be found to be very superior.—87, Bishopsgate-street, Without.

NEW TARIFF.—Sheet in various large dimensions delivered free in London.

Common in 100 feet cases			20s. 0d.
Do.	200	do.	38s. 0d.
Thirds	200	do.	42s. 6d.
Seconds	200	do.	60s. 8d.
Best (very superior)		do.	100s. 0d.

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS in sizes not exceeding 5 feet superficial.

¼ thick	1s. 0d.	½ inch	2s. 0d.
3-8th inch	1s. 2d.	1 inch	3s. 0d. per foot.
¼ inch	1s. 6d.		

PATENT ROUGH PLATE TILES.

¼ thick	6s. 11d.	3-8th inch	1s. 7d.
½ inch	1s. 3d.	¾ inch	2s. 0d. each.

GLASS DOMES for SKYLIGHTS, from 12 to 50 inches in diameter. These are well worth notice.

C C C Crown per crate 18 tables			£1 16 0
C C	do.	do.	2 0 0
Fourths	do.	do.	2 7 0
Thirds	do.	do.	3 2 6
Large Crown Squares in 100 feet boxes			24d. per foot.
8 by 6	— 10 by 8	do	28d. do.

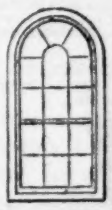
Very superior Plate for Pictures and Windows, averaging 26oz. from 1s. 6d. per foot upwards.

CHAS. WM. WATERLOW,

MANUFACTURER

of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.

SHOP FRONTS, SASHES AND FRAMES, DOORS, &c. MADE FOR THE TRADE.



JOHNSON and PASK,

1, Amwell-street, Clerkenwell, near the New River Head,

Beg to inform the Trade, and the Building Public in general, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiners' work, on the lowest possible scale of prices. All kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices forwarded by return of post, to any part of the country.

GRUEBER & Co.'s PATENT ASPHALTE ROOFING FELT, one penny per square foot; DRY HAIR FELT for covering Boilers, Steam Pipes, &c.; and SHEATHING FELT.—Agent, HENRY AMERY, 26, Bucklersbury, London.

By Her Majesty's Royal Letters Patent.

BAILLIE'S PATENT ROUNDED RIM LOCKS, WITH SECRET AND SECURE FIXINGS.

THIS CHEAP and USEFUL ARTICLE obviating the unsightly appearance and insecurity of the common rim lock, can be obtained from the Manufacturers, Messrs. CARPENTER and TILDESLEY, Willenhall; or from the sole Agent, Mr. JOHN FAULKNER, Ironmonger, 62, St. Martin's-le-Grand, London, opposite the new Money-Order Office.

FIRE BRICKS.—WARD and Co., Honduras Wharf, Bankside, respectfully solicit the attention of Gas Companies, Builders, Engineers, Oven Builders, Shippers, and others to the fact that they have now completed their Stock of Stourbridge, Welsh, and Newcastle Fire Bricks, Lumps, and Tiles, of all sizes and shapes, which they are offering with every advantage to purchasers. Goods may be had from ships in the river at a great reduction. Fire Clays, Loams, Dutch Clinkers, Stock Bricks, Windsor Bricks, Oven Tiles, Pan, Plain, Ridge, and Paving ditto, Moulding Sand, House Sand (red and white), River Sand, Ballast, Lime, Cement, Malt and Corn-drying Kiln Tiles, now in such general use for malting, &c. &c., Chimney-pots, Drain Pipes, Tiles, &c. &c. Goods made to pattern at the shortest notice. Sanitary Pipes of every description. Country orders executed with dispatch. Country Builders will find this the cheapest market for the above.

A CATALOGUE, with Engravings, Prices, and ample Particulars of

COMMUNION LINENS, ALTAR-CLOTHS, SURPLICES, ROBES, ECCLESIASTICAL CARPETS, &c. &c.

Forwarded free by Post to

ARCHITECTS, CLERGYMEN, AND CHURCHWARDENS, (only),

On application to the Manufacturer,

GILBERT J. FRENCH, BOLTON, LANCASHIRE.

TO HOUSE-DECORATORS AND UPHOLSTERERS.

A CARD.

JAMES MORANT, Grainer and Marbler to the Trade, 15, Westbourne-park Villas, Harrow-road, Paddington.

**** Please to copy the address.

TO DRAUGHTSMEN AND CIVIL ENGINEERS.

H. MORRELL, BLACK LEAD PENCIL MANUFACTURER, No. 149, Fleet-street, London.

These Pencils are prepared in various degrees of hardness and shades.

H H H H for drawing on wood.	F F light and shading.
H H H for architectural use.	F for general use.
H H for engineering,	B black for shading,
H for sketching.	B B ditto ditto.
H B hard and black for drawing.	B B B ditto ditto.
M medium.	B B B B ditto ditto

Sold by all the principal Stationers in town or country.

LIGHTERAGE.—To Contractors, Builders, Stone, Timber, and Slate Merchants, or others requiring Lighterage.—CHARLES STRUTTON, Lighterman and Timber Rafter, having a large number of craft of all sizes, is ready to undertake large or small CONTRACTS at prices particularly advantageous to his employers.—34, Commercial-road, Lambeth (near Waterloo-bridge), and Trinity-street, Rotherhithe (near the Commercial Docks).—BARGES LET on HIRE.

BUILDERS AND CONTRACTORS.

TARPAULINS for COVERING ROOFS during Repairs, SCAFFOLD CORD and every description of ROPE used by Builders upon the lowest terms. Marquees and temporary awnings on sale or hire. Orders per post receive the most prompt attention.—WILLIAM PIGGOTT, 115, Fore Street, City, Manufacturer, by Appointment, to Her Majesty's Honourable Board of Ordnance.

FIRE in LINCOLN'S-INN.—The importance of constructing the FLOORS and CEILINGS of buildings FIRE-PROOF, has been strikingly exhibited at the recent extensive fire in Lincoln's-Inn, where the absence of any precaution of this kind has led to the destruction of deeds of very considerable importance, and property of great value. The proprietors of the Patent Flooring offer the advantage of a fire-proof building at a cost not exceeding that of the ordinary mode of construction; and by the adoption of this improved method of building, greatly increased strength and durability are combined with perfect security to life and property.—Apply to Messrs. FOX and BARRETT, Leicester Chambers, 46, Leicester-square.

TO THE OWNERS OF SAW MILLS, PLANTATIONS and Collieries; to Builders, Millwrights, Engineers, &c.

IMPROVED CIRCULAR SAWS, Upright Saws, for timber and deal frames; Patent Tempered Machine Plane Irons, saw files, improved engineers' files; Patent Tempered Machine Knives, and cutters of all descriptions, made on the most scientific and economical principles, with dispatch, by BLAKE and PARKIN, the Meadow Steel Works, Sheffield.

LAP WELDED IRON TUBES.—W. H. RICHARDSON, Jun., and Co., MANUFACTURERS of every description of WROUGHT IRON TUBES for Locomotive and Marine Boilers, Gas, Steam, and other purposes.

PATENT TUBE WORKS, DARLASTON STAFFORDSHIRE

TO ARCHITECTS, BUILDERS, AND BRICK-MAKERS.

PUMPS of Superior CONSTRUCTION, bored perfectly true by improved machinery, in various plain and ornamental patterns for Conservatories, Squares, Market Places, Roads, Gardens, and for Liquid Manure. BRICK-MAKERS' PUMPS, in Wrought and Cast Iron, HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth. SINGLE and DOUBLE PUMPS up to twelve-inch bore, kept for Hire.

BENJ. FOWLER, 63, Dorset-street, Fleet-street.

PATENT TOUGHENED CAST-IRON Messrs. GARDEN and MACANDREW beg to call the attention of Architects, Builders, Engineers, Iron-founders, &c., to the above description of IRON (Mr. Morries Stirling's patent), which, after numerous trials, experimental and practical, is found greatly to exceed all other cast-iron in tensile and transverse strength, as well as in resistance to crushing forces. Several of the most extensive iron masters have been licensed, and from them, or their brokers, the patent iron can be procured. Messrs. GARDEN and MACANDREW have always a stock of this iron in pigs, and are ready to execute orders to any extent on the shortest notice.

27, Queen-street, Cheapside, November, 1848

FLEXIBLE INDIA-RUBBER PIPES AND TUBING, For Railway Companies, Brewers, Distillers, Fire Engines, Gas Companies, Gardening and Agricultural purposes, &c.

THE PATENT VULCANIZED INDIA-RUBBER HOSE-PIPES are made to stand hot liquor, and acids without injury—do not become hard or stiff in any temperature (but are always perfectly flexible) and as they require no application of oil or dressing, are particularly well adapted for locomotive engines, railway cranes, fire engines, pumps, gas, beer engines, gardens, and all purposes where a perfectly flexible pipe is required. Made all sizes, from ¼ inch bore upwards, and of any length to order. Vulcanized India rubber garden hose fitted with brass-taps, copper branch and roses complete, ready to be attached to pumps, water-butts, or cisterns. Sole manufacturer, JAMES LYNE HANCOCK, Goswell-mews, Goswell-road, London.

N.B. Vulcanized India-rubber washers of all sizes for joints or hot-water and steam pipes, and vulcanized sheet rubber any thickness for all kinds of joints, and other purposes.

PAINTING WITHOUT SMELL; a fact accomplished by the use of the newly-discovered SWEET OIL of TURPENTINE, instead of the deadly abomination called oil or spirits of turpentine. Paint mixed with it is free from smell, is improved in brilliancy of colour, and the baneful properties of the lead being neutralized, does not emit those noxious exhalations which have hitherto been so universally associated with painting. By this really valuable discovery house painting is now converted into a sanitary operation, that may be effected at any season of the year, being productive of health and comfort, without causing the slightest derangement to the domestic economy. Sold by the gallon, cwt., or ton, by every respectable oilman in the kingdom, and at the depot, 1, Bream's-buildings, Chancery-lane, where may be seen, and copies had of, the original certificate of Dr. Scrny, a senior member of the College of Chemistry. Sold also in sample bottles, 2s. each, bottles included.

COMPOSITIONS for WRITING with STEEL PENS.—STEPHENS'S WRITING FLUIDS compose the most splendid and durable colours, and the most indelible composition which art can produce; they consist of a BLUE FLUID, changing into an intense black colour. PATENT UNCHANGEABLE BLUE FLUIDS, remaining a deep blue colour. Two sorts are prepared, a light and dark blue. A superior BLACK INK, of the common character, but more fluid. A superior CARMINE RED, for contrast writing. A liquid ROUGE CARMINE, for artists and contrast writing, in glass bottles. A carbonaceous RECORD INK, which writes instantly black, and being proof against any chemical agent, is most valuable in the prevention of frauds. A liquid MECHANICAL and ARCHITECTURAL DRAWING INK, superior to Indian ink. Marking inks for linen, select steel pens, inkholders.—Prepared by the inventor HENRY STEPHENS, 54, Stamford-street, Blackfriars, and sold by booksellers and stationers everywhere, in bottles, at 1d., 2d., 3d., 6d., 1s., and 2s.

BUILDERS and CARPENTERS' IRONMONGERY WAREHOUSE, 18, Blandford-street, Manchester-square, leading out of Baker-street, Portman-square. Lists of prices may be obtained on pre-paid application.
JOHN and EDWIN YOUNG, Proprietors.

IRON BUILDING and ROOFING WORKS, SOUTHWARK.—JOHN HENDERSON PORTER, Manufacturer of Iron Roofs and Buildings, Patent Wrought-iron Beams, Fire-proof Flooring, &c.—Lists of prices and estimates furnished upon application at the office, 2, Adelaide-place, London-bridge, City.

IRON FOUNDRY, 9, Brick-lane, Old-street, St. Luke's.—J. J. JONES having made great additions to his STOCK OF PATTERNS, begs to inform the Trade, that he can now supply them with Plain and Ornamental Iron Columns, Girders, Railings, Gates, Iron Coping, Balconies, Window Guards, Verandahs, Ornamental Staircase Panels, Iron Staircases, Tomb Enclosures, Trellis Panelling, Lamp and other Brackets, Cantilevers, Newel Bars, Water Closet Work, Area Gratings, Fly and other Wheels, Wheel Plates, &c.
BAKER'S OVEN WORK, Forge Backs and Troughs, Rain Water Pipes and Gutters, Sash Weights, Furnace Bars, Stoves, Ranges, &c., always in stock.

IRON FOUNDRY,
168, DRURY-LANE, and CHARLES-STREET, DRURY-LANE
JOSEPH GLOVER,
Solicits the attention of the Trade to his extensive Stock of PATTERNS for CASTINGS of EVERY DESCRIPTION, consisting of those for every purpose, either structural or ornamental.
Wheel Pinion and Steam-Engine Patterns; Range Stove and Hot Plate Metal.
A stock of Rain-Water Pipes, Plain and O G Guttering, Air Bricks, Sash Weights, &c. &c.
A very superior description of Soot Door, particularly suitable for internal work, being perfectly secure, and not unsightly.
ESTIMATES given for IRON ROOFING and every description of Ironwork, complete to specification, and the work executed with every attention to quality and dispatch.
GLOVER'S FOUNDRY,
168, DRURY-LANE, and CHARLES-STREET.

TO BUILDERS AND OTHERS.
RAIN-WATER PIPES, heads, shoes, and elbows, half-round and O G gutters, sash weights, railing bars, sink and stable traps and gratings, air bricks, close and open coal plates, scrapers, tile lights, balcony panels, barrow wheels, &c.
GAS and WATER-PIPES, bends, branches, Tee pieces, syphons, and lamp columns; also hot-water pipes for heating buildings and hot-houses, and FLANGE PIPES, with all the usual connexions. A large stock of the above CASTINGS at very low prices, at JONES'S, Iron Bridge Wharf, No. 6, Bankside, Southwark.

TO PLUMBERS, BUILDERS, AND ENGINEERS.
CHEAPEST HOUSE IN LONDON for every description of best Town-made Brass and Copper Work.
PAN CLOSETS complete, with WHITE BASIN, 28s.—3 inch Lift Pumps, 6ls.; 2½ in., 75s.; 3 in. 87s. 6d. Cocks: ½ in., 1s. 8d.; 5-8th in., 2s.; ¾ in., 2s. 6d.—Copper Pipes, per foot: 1 in., 10d.; 1¼ in., 1s.; 1½ in., 1s. 2d.; 2 in., 1s. 6d.
Gun Metal Steam Cocks, Safety Valves, Steam and Water Indicators, &c., equally low at A. McGLASHAN'S, 16, Long-acre, and Hart-street, Covent Garden.

ST. HELENS, LANCASHIRE.

DOULTON'S STONE WARE PIPES, &c., manufactured at the above Works, are SHIPPED FREE ON BOARD in the Port of LIVERPOOL, or placed in Trucks on the Liverpool and Manchester Railway, without extra charge.
They may also be obtained of the following Agents:—
LIVERPOOL—T. and B. Chaffer, Stone Merchants, Great Howard-street, Liverpool; KENDAL and WESTMORELAND—Miles Thompson, Kendal; CARLISLE—C. Hodgson, Carlisle.
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VAUXHALL POTTERY, established upwards of 150 years.
ALFRED SINGER and Co., Manufacturers of GLAZED STONE WARE DRAIN PIPES, WATER-CLOSET PANS, &c.

with Syphon Traps.

STRAIGHT TUBES WITH SOCKET JOINTS.

3 in.	4 in.	6 in.	9 in.	12 in.	15 in.
5d.	6d.	8d.	1s. 1½d.	1s. 10d.	3s. per foot.

Bends, Junctions, Traps, &c. &c.
Patentees and Manufacturers of MOSAIC PAVEMENTS.
Close to the Surrey side of Vauxhall-bridge.

SELF-FLUSHING WATER-CLOSETS.—FLEXIBLE DIAPHRAGM VALVE COCKS.—"LAMBERT'S PATENT."—The patentees solicit the attention of architects, engineers, builders, and the trade to these inventions, both of which are very great improvements upon the appliances hitherto in use. The cocks have withstood the test of three years' trial, under severe pressure, with perfect success, and are warranted not to leak, and to be exceedingly durable. The closets also have been well tried, and with equal success; they are made self-acting or otherwise, and are so arranged that when self-acting, but a given quantity of water is used at each action of the seat, the movement of which is scarcely perceptible. No service-box, D trap, cranks, or wires are required, consequently the chief causes of derangement and cost of fixing are removed. They are exceedingly cheap and strong, being made of enamelled iron ware.
THOMAS LAMBERT and SON, Patentees, Manufacturers of Block Tin Tube, Hydraulic, Steam and Gas Fittings, corner of Short-street, New-cut, Lambeth.

SANITARY IMPROVEMENT.—Perfect freedom from Stench or Noxious Vapours arising from Sewers Drains, &c., is insured by the use of
BUNNETT'S
PATENT SELF-ACTING EFFLUVIA TRAPS
Adapted for Streets, Public Buildings, Dwelling Houses, Factories, Stables, &c.
The above most important improvement has been extensively tried in the City, and many large provincial towns, with perfect success. They are cheap, durable, perfectly SELF-ACTING and SELF-CLEANSING, and cannot get out of order. Manufactured in various sizes, to suit all purposes, by BUNNETT and SORPE, ENGINEERS, 26, Lombard-street, London (where specimens may be seen in action), and at the Works, Deptford, Kent.
INVENTORS AND PATENTEES OF SELF-ACTING
(DOUBLY TRAPPED
PAN AND VALVE WATER-CLOSETS;
(A most successful combination of the above principle, with other patented improvements.)

CAST-IRON PIPES, IRON WORK FOR OVENS, &c.
RAIN PIPES, &c.—F. A. TIDDEMAN, Purfleet Wharf, Earl-street, City, near Blackfriars-bridge, keeps a large stock of Rain Pipes, Heads, Shoes, Elbows, &c., half round and O. G. Gutters, Socket Pipes for Water or Gas, Flanch Pipes, Sash Weights, and other Castings; Iron Work for Baker's Ovens of every description, fitted complete, to be had in sets or in parts.—Prices equal to all competition. Contracts taken to any extent.

TO BUILDERS and CARPENTERS.—Elliptic Stoves, double backs, 3d. per inch. Registers, 6½d 7d., 8d. per inch.
Cottage Ranges, with Ovens and Boilers, 3 ft. 2 in. 40s.; 3 ft. 4 in., 42s.; 3 ft. 6 in., 44s.
Self-acting Ranges, with Circular Oven and Back Boiler, best Wrought Bars and Bright Fittings,
3 ft., £2. 18s. 3 ft. 6, £3. 7s. 4 ft., £3. 15s.
Best Patent Cut Clasp.

4½d.	5d.	7d.	10d.	1s. 2d.	1s. 8d. per 1,000
3d.	4d.	6d.	8d.	10d.	20d.

Best Sheet Floor Brads 12s. per cwt.
Best Town Glue 28s. Do. Scotch, 32s. per cwt.
Best Patent Sash Line.

4s. 3d.	5s.	6s. 6d.	7s. 6d.	10s.	12s. per gross.
1	2	3	4	5	6

At F. R. WILLIAMSON'S IRONMONGERY and STOVE WAREHOUSE, 35, Chiswell-street, Finsbury-square.
Lists of Prices had on application at the Warehouse, or by letter pre-paid, inclosing postage stamp.—Warehouse closes at 7 o'clock.

TO BUILDERS, CARPENTERS, &c.—The undermentioned are the PRESENT PRICES of IRONMONGERY, at YOUNG'S, 194, Oxford-street. Every other article equally low. Orders executed upon receipt of remittance or a respectable London reference.

	2	2½	3 Inches.
Cast Butts	5s. 3d.	7s. 6d.	11s. per 6 dozens.
Cut	4d.	6d.	10d. 20d. } per
Clasp	5½d.	7d.	1s. 2d. 1s. 8d. } 1,000.

	Nos. 3	4	5	6
Patent Line	6s. 6d.	7s. 3d.	9s. 10d	12s. per gross.

	2	2½	3 Inches.
Rain Pipe	1s. 1d.	1s. 3d.	1s. 5d. per yard.

PATENT SUSPENSION STOVES.—As a precaution against cholera, the Board of Health strongly recommend "warmth and ventilation." For the attainment of this all-important object, the PATENT PORTABLE VENTILATING SUSPENSION STOVES were expressly invented. Thousands of them have been sold, and tens of thousands are now rejoicing in the security and comfort which these stoves afford. Sizes suited for any situation, from the smallest bed room to the largest halls. Price from 15s. and upwards. In operation daily at GEORGE and JOHN DEANE'S, 46, King William-street, London-bridge. Prospectuses, testimonials, &c., forwarded by post free.

TO BUILDERS, CARPENTERS, AND OTHERS.
BENJAMIN WALMSLEY, Wholesale Ironmonger, Brass-founder, Stove-grate, and Kitchen-range Manufacturer, at the Padlock, 137, London-road, Southwark.
Self-acting ranges, with oven and boiler and revolving shelves complete.
3 feet, 2l. 10s. 3 feet 6 inches, 3l.
Register-stoves, from 6d. an inch and upwards.
Elliptic-stoves, with double backs, 3d. an inch.
Washing-coppers, 1s. 2d. per lb.
Sash pullies (iron bd.), 8s. per gross. Sash weights, 6s. per cwt.
Cast butts, per dozen pair.
2 inch, 10d. 2½ inch, 1s. 3d. 3 inch, 1s. 9d.
Best cut clasp, per thousand.
4d., 5½d.; 6d., 7d.; 10d., 1s. 3d.; 20d., 1s. 7d.
Every description of ironmongery, brass-foundry, &c., adapted to the use of builders, upholders, cabinet-makers, bell-hangers, smiths, wheelwrights, and others, of quality and at prices that defy competition. Iron and spring steel.

TO ARCHITECTS, BUILDERS, &c.
HAYWARD, BROTHERS, late R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.
Strong Self-acting Kitchen Ranges, with Back Boiler and Oven and Wrought Bars:—

3 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
£3.	£3. 10s.	£3. 15s.	£4.	£4. 10s.

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

3 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
£5.	£5. 15s.	£6. 5s.	£6. 10s.	£7.

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 3½d., and 4d. do.
Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

OLD-ESTABLISHED WHOLESALE IRONMONGERY WAREHOUSE, Kitchen-range, and Stove-grate Manufactory 18, Cross-street, Walworth.
JOHN GRICE most respectfully solicits the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.
Black Registers, from 6d. per in. and upwards.
Bright ditto with Black and Bright Bars, 3l. 10s. and upwards.
Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright:—

3 ft.	3 ft. 6 in.	4 ft.
2l. 18s.	3l. 7s.	3l. 15s.

Elliptic Stoves, 3d. per in.
All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell-hanging in superior style, hung in secret, 8s. per pull.

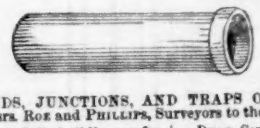
WARM-AIR STOVES.—J. L. BENHAM and SONS respectfully solicit the attention of Architects, Builders, and the Public in general to their extensive stock of AIR-STOVES, suitable for Shops, Halls, School-rooms, &c. Also, a great variety of CHURCH or CHAPEL STOVES.
Greenhouses, Halls, and other buildings WARMED BY HOT WATER from the servant's offices, or by the circulation of WARM AIR ON THE POLMAISE SYSTEM, which is very efficient, and of very moderate cost.
19, WIGMORE-STREET, CAVENDISH-SQUARE, LONDON.

NOTT'S PATENT STOVES.
J. L. BENHAM and SONS beg to recommend these STOVES to Architects, Builders, and Ironmongers, as the best with which they are acquainted for HALLS, SHOPS, WAREHOUSES, &c. They are remarkable for economy of fuel and steadiness of heat, only requiring attendance once in six or eight hours. For CHURCHES and CHAPELS they are particularly adapted, as a cheap, simple, and effectual mode of warming them.
HOT WATER PIPES can be attached for warming distant apartments, conservatories, &c.
References can be given to many Churches and other Buildings where they have been in use from ten to fifteen years.
MANUFACTORY AND WAREHOUSE REMOVED FROM GREAT QUEEN-STREET TO
19, WIGMORE-STREET, CAVENDISH-SQUARE.

PIERCE'S ECONOMICAL RADIATING STOVE GRATES.—Families furnishing are solicited to examine the large and extensive assortment of Drawing-room and other GRATES, recently completed from the most *recherché* designs in the Louis Quatorze, Elizabethan, Gothic, and other styles, with FENDERS AND FIRE-IRONS *en suite*, always on show at the manufactory. These Grates combine the decorative and useful, blending economy with comfort, and are guaranteed as a PERFECT CURE FOR SMOKY CHIMNEYS. In BED-ROOMS and NURSERIES they are found invaluable, retaining the heat for many hours after the fire is out. KITCHENS and LAUNDRIES fitted up in the most complete manner with Ranges, Ovens, Boilers, Hot-plates, Broiling-plates, Patent Smoke-jacks, &c., with the latest improvements. HEATING by HOT-WATER, combining Warmth with Ventilation, on PIERCE'S improved method, adapted for every description of building, and so arranged as to warm the entire of a large mansion from one moderate fire.
PIERCE, 5, JERMYN-STREET, REGENT-STREET.

TUBULAR DRAINS in GLAZED STONE WARE, MANUFACTURED BY HENRY DOULTON AND CO., POTTERS, HIGH-STREET, LAMBETH, LONDON.
STRAIGHT TUBES, WITH SOCKET JOINTS,

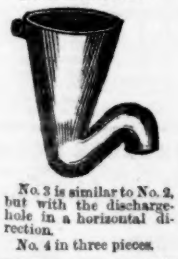
In 3 feet lengths.		In 2 feet lengths.				
2 in.	3 in.	4 in.	6 in.	9 in.	12 in.	15 in. 18 inch bore
4d.	5d.	6d.	8d.	1s. 1½d.	1s. 10d.	3s. 4s. per foot.



BENDS, JUNCTIONS, AND TRAPS OF ALL KINDS.
TESTIMONIALS from Messrs. ROE and PHILLIPS, Surveyors to the new Metropolitan Commission of Sewers.
DEAR SIR,—I would respectfully recommend the building profession generally, in future to use no other material than Glazed Stoneware Pipes for house drains; and I am quite sure by their so doing, they will be conferring a great boon on public health, and that to an extent they little suppose. I also respectfully submit that there is now no reasonable excuse for their not using them, for it has been proved that as regards strength, durability, and efficiency, there cannot be a better article.
I am, Dear Sir, yours truly,
Mr. H. Doulton. JOHN PHILLIPS.
DEAR SIR,—In reply to your request, I beg to state that Glazed Stoneware Tubular Drains are those which I would in all case recommend builders or proprietors of houses to use, there being no other material that at this time equals them in efficiency joined with economy.
I am, Dear Sir, yours truly,
Mr. H. Doulton. JOHN ROE.

No. 1, in Two Pieces.

No. 2, in One Piece.



No. 3 is similar to No. 2, but with the discharge-hole in a horizontal direction.
No. 4 in three pieces.

CHEAP WATER-CLOSET PANS, with Syphon Traps,
IN GLAZED STONE WARE,
PRICE 7s. 6d. EACH,
Manufactured by
DOULTON AND WATTS,
LAMBETH POTTERY,
HIGH-STREET, LAMBETH, LONDON.

The annexed Pans are of the most simple yet perfect construction; they are cleanly and imperishable; require no metal fans, and the price at which they are offered is so low, as to admit of their universal adoption.

JAMES STIFF, MANUFACTURER of GLAZED STONE WARE DRAIN PIPES, BENDS, JUNCTIONS, TRAPS, &c., 39, HIGH STREET, LAMBETH, LONDON. Established 1751.
Water Closet Pans, with Syphon Traps, 7s. 6d. each.
STRAIGHT TUBES, with Socket Joints, in 2 feet lengths.

N.B. These are made without the discharge-hole being turned downwards.

The great advantages attending the use of these articles are now so generally understood, as to render any enumeration of them almost superfluous. Their cheapness, efficiency, and durability, are universally admitted; while the rapidly increasing demand for them proves their estimated superiority over every other kind hitherto before the public for similar purposes.
Inspection is invited to an assorted stock of Drain Tubes, of every form and size, adapted to the various situations for which they may be required; as also to the WATER-CLOSET PANS OF IMPROVED CONSTRUCTION, and interior glaze far surpassing any other manufactured of Brown Stone Ware.

3 in. bore, 5d.	4 in. 6d.	6 in. 8d.	9 in. 1s. 1½d.	12 in. 1s. 10d.	15 in. 3s. 4d. per Foot

May be had also at Messrs. GLADDISH'S LIME WHARFS,—Pedlar's Acre, Westminster Bridge; City-road Wharf, City Basin Dockhead, Bermondsey; Danvers Wharf, foot of Battersea Bridge, Chelsea; Pratt Wharf, King's-road, Camden New Town.